The Handbook of Pragmatics

Edited by

Laurence R. Horn and Gregory Ward



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Introduction

Pragmatics as a field of linguistic inquiry was initiated in the 1930s by Morris, Carnap, and Peirce, for whom syntax addressed the formal relations of signs to one another, semantics the relation of signs to what they denote, and pragmatics the relation of signs to their users and interpreters (Morris 1938). In this program, pragmatics is the study of those context-dependent aspects of meaning which are systematically abstracted away from in the construction of content or logical form.

The landmark event in the development of a systematic framework for pragmatics was the delivery of Grice's (1967) William James lectures, a masterful (if incomplete) program that showed how a regimented account of language use facilitates a simpler, more elegant description of language structure. Since then, a primary goal of pragmatics has been the one reflected in Bar-Hillel's celebrated warning (1971: 405): "Be careful with forcing bits and pieces you find in the pragmatic wastebasket into your favorite syntactico-semantic theory. It would perhaps be preferable to first bring some order into the contents of this wastebasket." More recently, work in pragmatic theory has extended from the attempt to rescue syntax and semantics from their own unnecessary complexities to other domains of linguistic inquiry, ranging from historical linguistics to the lexicon, from language acquisition to computational linguistics, from intonational structure to cognitive science.

In this Handbook, we have attempted to address both the traditional and the extended goals of theoretical and empirical pragmatics. It should be noted, however, that other traditions – especially among European scholars – tend to employ a broader and more sociological conception of pragmatics that encompasses all aspects of language use not falling strictly within formal linguistic theory; see for example the entries in Verschueren et al. (1995) and Mey (1998) and, for a more restricted view, Moeschler and Reboul (1994). For reasons of space and coherence of presentation, we have largely restricted our coverage to the more narrowly circumscribed, mainly Anglo-American conception of linguistic and philosophical pragmatics and its applications.

The Handbook is divided into four parts. Part I contains overviews of the basic subfields within pragmatic theory: implicature, presupposition, speech acts, reference, deixis, and (in)definiteness. The domain of discourse, and in particular the structuring of information within and across sentences, is the focus of the chapters in part II. The chapters in part III concentrate on the interfaces between pragmatics and other areas of study, while those in part IV examine the role of pragmatics in cognitive theory.

For centuries before the field had a label or identity, pragmatics as we now understand it has radiated outward from that aspect of human inferential behavior Grice calls implicature, the aspect of speaker meaning that distinguishes what is (strictly) said from what is (more broadly) meant. The character of conversational implicature is surveyed in Larry Horn's chapter, which explores the relation of implicature to propositional content and linguistic form.

In addition to implicature, the realm of pragmatic inference notably encompasses presupposition. While a semantic presupposition is a necessary condition on the truth or falsity of statements (Frege 1892, Strawson 1950; see also Beaver 1997 and Soames 1989), a pragmatic presupposition is a restriction on the common ground, the set of propositions constituting the ongoing discourse context. Its non-satisfaction results not in the emergence of truth-value gaps but in the inappropriateness of a given utterance in a given context (Karttunen 1974, Stalnaker 1974). In asserting *p*, I propose adding the propositional content of *p* to the common ground; in presupposing *q*, I treat *q* as already (and non-controversially) part of the common ground. But, as observed by Stalnaker (1974) and Lewis (1979), a speaker may treat *q* as part of the common ground even when it actually isn't, through the principle of accommodation. In his contribution to this volume, Jay Atlas focuses on accommodation and non-controversiality as the keys to the neo-Gricean theory of presupposition.

If pragmatics is "the study of linguistic acts and the contexts in which they are performed" (Stalnaker 1972: 383), speech act theory – elaborating the distinction between the propositional content and the illocutionary force of a given utterance – constitutes a central subdomain, along with the analysis of explicit performative utterances and indirect speech acts. Speech act theory has evolved considerably from the early work initiated by Austin and Searle, as is discussed in Jerry Sadock's chapter.

While speech acts and presuppositions operate primarily on the propositional level, reference operates on the phrasal level. Reference involves a speaker's use of linguistic expressions (typically NPs) to induce a hearer to access or create some entity in his mental model of the discourse. A discourse entity represents the referent of a linguistic expression, i.e. the actual individual (or event, property, relation, situation, etc.) that the speaker has in mind and is saying something about. The relation between the expressions uttered by a speaker (and the demonstrative gestures that may accompany them) and what they do or can denote presents a range of problems for semantics, pragmatics, and psychology. Greg Carlson's chapter on reference surveys this important

domain, while other contributions to the Handbook (cf., for example, the chapters by Nunberg and by Kehler and Ward in part II) revisit specific aspects of the issues raised here.

One persistent complication for any theory of reference is the ubiquity of deictic or indexical expressions. From its inception, a central goal of pragmatics has been to "characterize the features of the speech context which help determine which proposition is expressed by a given sentence" (Stalnaker 1972: 383). The meaning of a sentence can be regarded as a function from a context into a proposition, where a proposition is a function from a possible world into a truth value; pragmatic aspects of meaning include the relation between the context in which an utterance is made and the proposition expressed by that utterance. Deixis characterizes the properties of expressions like *I*, *you*, *here*, *there*, *now*, *hereby*, tense/aspect markers, etc., whose meanings are constant but whose referents vary with the speaker and hearer, the time and place of utterance, and the style, register, or purpose of the speech act. This is explored in the chapter contributed by Steve Levinson, which examines in detail the nature of cross-linguistic variation within the deictic domain.

Another issue within the overall account of reference is the choice among referring expressions and in particular the notion of definiteness, which has been defined both as a formal marking of NPs and as an information status (see chapters in part II). The felicitous use of definite expressions has been pegged to the requirement that the referent of the NP be either familiar within the discourse or uniquely identifiable to the hearer. The other side of this coin is indefiniteness, which has typically been associated with novelty (as opposed to familiarity) or with non-uniqueness. These issues are investigated in Barbara Abbott's chapter, which concludes part I of the Handbook.

The chapters in part II focus on context-dependent aspects of meaning that arise within discourse, in particular the structuring of information within and across sentences. The starting point for work in this area is the now well-established principle that speakers structure their discourse by taking into account both the (assumed) belief states and attentional states of their addressees.

The lead-off chapter by Gregory Ward and Betty Birner examines the role that non-canonical syntactic constructions play in the construction and processing of a coherent discourse. One of the key factors contributing to the coherence of a discourse is the existence of informational links among utterances within the discourse. Ward and Birner show how speakers' use of non-canonical word order marks the information status of these links across sentences while at the same time facilitating discourse processing through the strategic placement of information in different syntactic positions.

At the heart of information structure since the seminal work of the Prague School in the 1930s are the interrelated notions of topic or theme (what a given statement is about) and focus or rheme (what is predicated about the topic). In their chapter, Jeanette Gundel and Thorstein Fretheim review the vast and often confusing literature on these notions across various frameworks. They

take topic and focus to be essentially linguistic categories, irreducible to more general cognitive or social principles. Moreover, they argue, a crucial distinction must be made between those properties of topic and focus that are directly attributable to the grammar and those that follow from purely pragmatic principles. Distinguishing between the grammatical and extragrammatical properties of topic and focus is crucial to the formulation of theories of discourse and information structure and to a more adequate account of how the language system interacts with general pragmatic principles governing language production and understanding.

At the heart of any comprehensive theory of the relation of an utterance's meaning to its context is a precise characterization of the very notion of context itself. As Craige Roberts points out in her chapter, an adequate theory of discourse and discourse coherence requires that the relation holding between a linguistic expression and its context of utterance be appropriately modeled and continuously updated as the discourse unfolds. For Roberts, what is necessary in order to model and track this relation is information about the mutual intentions of the co-participants and how these intentions are interrelated. This information, coupled with an appropriate semantics and inference engine, provides the basis for our understanding how context affects (i.e. induces or constrains) utterance interpretation.

Diane Blakemore's chapter focuses on discourse markers (DMs), also known as discourse connectives or particles (*well*, *so*, *but*, and the like). DMs have been characterized both negatively, by the non-truth-conditionality of their contribution to meaning, and positively, by their role in highlighting coherence and connectivity among the units of a discourse. Blakemore sees the distribution and interpretation of such markers as informing our understanding of the semantics–pragmatics interface and of the distinction between conceptual and procedural meaning. After evaluating the accounts of DMs offered by speech act theory, traditional Gricean pragmatics, and argumentation theory, Blakemore argues for a relevance-theoretic analysis of the contribution of these expressions.

While Blakemore's chapter outlines the role that discourse markers play in establishing coherence, Andy Kehler's chapter analyzes discourse coherence in its own right. As Kehler observes, hearers do not generally interpret adjacent sentences within a discourse segment as independent and unrelated utterances. Rather, there is an expectation that statements are related in one of several ways that can be captured by a small number of coherence relations. Kehler categorizes these relations into three broad classes defined by basic cognitive principles: cause–effect, contiguity, and resemblance. Kehler illustrates the crucial role that coherence relations play in language by examining their influence on the interpretation of a wide range of disparate linguistic phenomena, including VP-ellipsis, gapping, extraction from conjoined clauses, and pronominal reference.

A long-standing challenge to sentence-based approaches to interpretation is the fact that a speaker whose utterances are syntactically and semantically

subsentential may nevertheless manage to express complete propositions and perform fully felicitous speech acts by means of such expressions. The chapter by Rob Stainton on the pragmatics of non-sentences provides a cognitive-pragmatic analysis consisting of two processes: decoding and unencapsulated inference. According to Stainton, non-sentential utterances are first interpreted by the linguistic decoder, which produces a subsentential mental representation. This representation, in turn, is combined with another (non-decoder-derived) mental representation to yield a fully sentential mental representation, which, while not part of any natural language, nonetheless encodes the complete message as intended by the speaker.

Yan Huang's chapter investigates the extent to which the formal conditions of classical binding theory can be supplanted by pragmatic principles. Following earlier work by Reinhart, Dowty, and especially Levinson, he argues that the near-complementary distribution of pronominals and anaphors (i.e. reflexives and reciprocals) and the cross-linguistic patterns of long-distance anaphora and logophoric reference can best be accounted for if the syntax and semantics of binding interacts with neo-Gricean pragmatic theory. As Huang observes, the "soft constraints" built into the neo-Gricean analysis anticipates recent Optimality-theoretic approaches to anaphora.

Another challenge to the self-sufficiency of grammatical theory for explaining linguistic phenomena is offered in Susumu Kuno's chapter on empathy and perspective. Empathy is the degree to which a speaker identifies with, or takes the perspective of, a particular individual or entity referenced in a given utterance. In this way, the same propositional content can be presented from different points of view. Many apparently mysterious phenomena assumed to be purely syntactic can be successfully accounted for only by appeal to these quintessentially pragmatic notions. Kuno proposes that such perspectives interact with syntactic principles in predictable ways and that it is only through such an interaction of pragmatic and grammatical modes of explanation that a full account of such linguistic phenomena as anaphora, logophoricity, and passivization is possible.

Among the most creative but least well understood traits of colloquial discourse is the possibility of deferred reference, which occurs when an expression that conventionally picks out a given referent is used in a sufficiently rich context to refer instead to a discourse entity associated with that referent, as when a bartender refers to his customer as "the gin and tonic" or a doctor to her patient as "the kidney transplant in 317." In his chapter, Geoff Nunberg treats deferred reference as an instance of meaning transfer applied to the properties which linguistic expressions (NPs and predicates) supply. Nunberg explores some of the pragmatic and non-pragmatic factors that constrain and affect such transfers and figurative language more generally.

Herb Clark develops the (now uncontroversial) idea advanced by Grice, Lewis, and others that language is a fundamentally cooperative venture. In this chapter, Clark argues for a pragmatic theory of language performance drawing on two interrelated systems: a primary system of linguistic communication and

a collateral system that draws heavily on Clark's notion of display. Speakers display various signals to addressees that serve to indicate the speaker, addressee, time, place, and content of the signal. The addressee, in turn, signals receipt of the display by conveying acceptance of these indications. Such feedback mechanisms are shown to be crucial to our understanding of the communicative process.

Rounding out part II is Andy Kehler's and Gregory Ward's chapter on event reference. Whereas most pragmatic accounts of the constraints associated with particular referring expressions focus on reference to entities (see e.g. Carlson's chapter in part I), Kehler and Ward argue that such accounts need to be revised and extended to account for event-level ellipsis and reference. Their examination of four different event-referring constructions suggests that an adequate model must ultimately appeal to a diverse set of properties that govern natural language syntax, semantics, and pragmatics.

Part III offers varied perspectives on the major interfaces of pragmatics. Linguists have long sought to rely on pragmatic theory to render their accounts of grammatical phenomena both simpler and more explanatory. In the early years of generative grammar, any appeal to pragmatics was seen as hand-waving, less of an explanation of the phenomenon in question than an excuse to avoid dealing with it. As our understanding of pragmatics has deepened, so has our recognition of the ways in which it interacts with other aspects of linguistic competence. Georgia Green's chapter addresses some of the more significant properties of the syntax–pragmatics interface, including the role of context (encompassing speakers' beliefs and intentions) in the description of grammatical constructions and in the formulation of constraints on grammatical processes.

Another investigation of the syntax–pragmatics interface is the chapter by Adele Goldberg on argument structure. Goldberg shows that pragmatic factors such as topic, focus, and information structure all play a crucial role in determining whether a particular argument (or adjunct) is realized in the syntax and, if so, where and in what form that argument appears. These pragmatic factors interact with language-specific grammatical principles to produce the variation in argument structure found cross-linguistically.

From the inception of the Peirce–Carnap–Morris trichotomy, one central issue in the study of meaning has been the semantics/pragmatics distinction and the proper treatment of the borderline defined by their interaction. This territory is explored in the chapters by François Recanati and Kent Bach. Recanati provides an overview of the domain, concentrating on the emergence of modern pragmatics from the crucible of the conflict between formal semanticists and ordinary language philosophers in the second half of the twentieth century. As Recanati shows, current disputes on the role of pragmatic processes in the determination of truth-conditional content and the treatment of unarticulated constituents can be traced to the different responses urged by Griceans and relevance theorists to the division of labor between semantics and pragmatics in the treatment of meaning in natural language.

Bach's chapter addresses two sets of problems: those for which the philosophy of language informs the study of pragmatics (e.g. the treatment of performatives, speech acts, and implicature) and those for which pragmatics informs the philosophy of language. In keeping with the Bar-Hillel wastebasket apothegm, Bach repositions the line of demarcation between semantics and pragmatics in a way that allows a significant range of traditional semantic problems in the areas of reference, presupposition, quantification, and ambiguity to be resolved – or at least clarified – by the application of independently motivated pragmatic, i.e. communication- or use-based, principles and processes.

The traditional syntax/semantics/pragmatics trichotomy extends from the analysis of sentences and discourse into the lexicon. While the study of the syntax and semantics of words (morphology and lexical semantics, respectively) are well-established disciplines, the last quarter century has witnessed the development of the new field of lexical pragmatics. Reinhard Blutner's chapter is devoted to this field, focusing on pragmatically based constraints on lexicalization (see also Horn's implicature chapter), the role of pragmatic strengthening, markedness asymmetries, and the non-monotonic character of word meaning. (The diachronic aspects of these questions are treated in Traugott's chapter.) As Blutner shows, there is a natural kinship between a neo-Gricean approach to the mental lexicon (dating back to McCawley 1978) and current developments in bidirectional Optimality Theory, in which the dialectic of speaker and hearer receives a natural representation.

As Julia Hirschberg points out in her chapter, intonational meaning is essentially pragmatic in nature, as its interpretation crucially depends on contextual factors. Hirschberg brings together research from linguistics, speech, computational linguistics, and psycholinguistics, applying a uniform notation to describe the prosodic variation discussed in this work. Intonation is shown to interact with syntax (attachment ambiguities), semantics (scope ambiguities, focus), and of course pragmatics (discourse and information structure, pronominal reference, and speech act interpretation).

The last quarter century has seen the study of pragmatic aspects of meaning change and lexicalization play an increasingly significant role within diachronic linguistics. Both corpus-based and theoretical investigations have been enriched by the recognition of the role of implicature in facilitating and constraining the set of possible and likely varieties of change. The application of neo-Gricean inference to lexical change is the focus of Elizabeth Traugott's chapter on historical pragmatics, which also explores the ways in which polysemy arises and the routes by which non-literal aspects of meaning tend to become frozen into the conventional value of a lexical expression.

Pragmatics plays a central role in ontogeny as well as phylogeny, as Eve Clark's chapter demonstrates. Clark explores the language learner's acquisition of the ability to tailor the form of utterances to the assumed requirements of one's conversational partners. In their application and eventual refinement of the principle of contrast, their familiarization with the interactional principles

of politeness and common ground, and their first steps toward the development of a working knowledge of implicature from both speaker's and hearer's perspectives, children have set out on the road that will lead to full pragmatic competence.

No survey of the interfaces of pragmatics would be complete without a look at attempts to build machines that have the capacity to emulate human pragmatic competence. As Dan Jurafsky notes in his chapter, computational pragmatics is largely concerned with the modeling of the ability of humans to infer information not explicitly realized in an utterance. Jurafsky focuses on the interpretation and generation of speech acts as a case study of recent work in this area.

In keeping with other sections of the Handbook, part IV is organized thematically rather than doctrinally; the six papers it collects all deal with the relation between pragmatics and cognition, while encompassing a variety of distinct theoretical approaches. Deirdre Wilson, Dan Sperber, and Robyn Carston have been major advocates of relevance theory, an influential revision of the Gricean paradigm (Sperber and Wilson 1986a, Carston 2002b). Wilson and Sperber present a state-of-the-art overview of RT, focusing on the implications of this approach for communication, utterance interpretation, and the modular view of mental architecture, while also touching on the analysis of irony and metarepresentation more generally. In her chapter, Carston reexamines the classic Gricean distinction between what is said and what is implicated in the light of current developments in RT. She argues for a position in which "what is said," a central construct in neo-Gricean work, in fact plays no role within pragmatic theory, and in which the implicit/explicit distinction is reconstructed in terms of the relevance-theoretic notion of explicature, a pragmatically determined aspect of propositional content that (contrary to implicature) is germane to the determination of truth conditions.

A different model of the pragmatics of cognition underlies work by Gilles Fauconnier, the originator of the theory of mental spaces. In his chapter, Fauconnier examines the relation between literal and metaphorical interpretation, and concludes that a direct assignment of meaning to grammatical constructions offers a more insightful approach than one mediated by a two-stage Gricean analysis in which literal meaning serves as the input to metaphorical reanalysis. Fauconnier extends the theory of mental spaces to the analysis of opacity, presupposition, performatives, and scalar predication, surveying a variety of ways in which recent developments in cognitive science are relevant for research in pragmatics.

Another perspective on cognitive pragmatics is offered by Paul Kay, one of the founders of Construction Grammar. After demonstrating the complexity of the issues the hearer must sort out in the interaction of grammatical structure and context or common ground as a prerequisite to interpretation, Kay surveys a variety of domains in which pragmatic information influences grammatical constructions, including indexicals, scalar models, metalinguistic operators, hedges (*kinda, sorta, technically*), and speech acts.

In his chapter, Michael Israel investigates one such class of constructions, that comprising negative and positive polarity items. He shows how the lexical properties and grammatical distribution of such items are intricately tied to Kay's notion of scalar model and to the pragmatic asymmetry of negation and affirmation (Horn 1989). Like other essays in the volume, Israel's discussion also explores the important issue of how inherently pragmatic conditions become conventionalized into the lexicon and grammar.

A final look at the pragmatics/cognition interface is presented in the chapter by Jerry Hobbs on abductive reasoning. Abduction, originally identified by C. S. Peirce and more recently developed by researchers in artificial intelligence dealing with the non-monotonic nature of natural language inference, is applied by Hobbs to a variety of problems of a pragmatic nature, ranging from disambiguation and reference resolution to the interpretation of compound nominals and the nature of discourse structure.

We conclude our introductory remarks with a heartfelt appreciation for the efforts and perseverance of our contributors through the difficulties of the editorial process; without them there would be no *Handbook of Pragmatics*. In addition, we would like to thank Sarah Coleman and Tami Kaplan at Blackwell for their support and hard work on our behalf. Finally, we extend a special note of thanks to Kent Bach, Ann Bunger, and Bill Lachman for their editorial assistance.

Part I The Domain of Pragmatics

1 Implicature

LAURENCE R. HORN

1 Implicature: Some Basic Oppositions

IMPLICATURE is a component of speaker meaning that constitutes an aspect of what is **meant** in a speaker's utterance without being part of what is **said**. What a speaker intends to communicate is characteristically far richer than what she directly expresses; linguistic meaning radically underdetermines the message conveyed and understood. Speaker S tacitly exploits pragmatic principles to bridge this gap and counts on hearer H to invoke the same principles for the purposes of utterance interpretation.

The contrast between the said and the meant, and derivatively between the said and the implicated (the meant-but-unsaid), dates back to the fourth-century rhetoricians Servius and Donatus, who characterized litotes – pragmatic understatement – as a figure in which we say less but mean more ("minus dicimus et plus significamus"; see Hoffmann 1987 and Horn 1991a). In the Gricean model, the bridge from what is said (the literal content of the uttered sentence, determined by its grammatical structure with the reference of indexicals resolved) to what is communicated is built through implicature. As an aspect of speaker meaning, implicatures are distinct from the non-logical inferences the hearer draws; it is a category mistake to attribute implicatures either to hearers or to sentences (e.g. *P and Q*) and subsentential expressions (e.g. *some*). But we can systematically (at least for generalized implicatures; see below) correlate the speaker's intention to implicate q (in uttering p in context C), the expression p that carries the implicature in C, and the inference of q induced by the speaker's utterance of p in C.

Subtypes of implicature are illustrated by (1a–c) (after Grice 1961: §3); the primed member of each pair is (in certain contexts) deducible from its unprimed counterpart:

(1)a. Even KEN knows it's unethical.
   a′. Ken is the least likely [of a contextually invoked set] to know it's unethical.

b. [in a recommendation letter for a philosophy position]
Jones dresses well and writes grammatical English.
b′. Jones is no good at philosophy.
c. The cat is in the hamper or under the bed.
c′. I don't know for a fact that the cat is under the bed.

Unlike an entailment or logical presupposition, the inference induced by *even* in (1a, a′) is irrelevant to the truth conditions of the proposition: (1a) is true if and only if Ken knows it's unethical. The inference is not CANCELABLE without contradiction (*#Even Ken knows it's unethical, but that's not surprising*), but it is DETACHABLE, in the sense that the same truth-conditional content is expressible in a way that removes (detaches) the inference: *KEN knows it's unethical (too)*. Such detachable but non-cancelable aspects of meaning that are neither part of, nor calculable from, what is said are CONVENTIONAL implicatures, akin to pragmatic presuppositions (Stalnaker 1974). Indeed, along with connectives like *but*, the now classic instances of conventional implicature involve precisely those particles traditionally analyzed as instances of pragmatic presupposition: the additive component of adverbial particles like *even* and *too*, the "effortful" component of truth-conditionally transparent "implicatives" like *manage* and *bother*, and the existential component of focus constructions like clefts.

But in contrast with these non-truth-conditional components of an expression's conventional lexical meaning,[1] the inferences induced by (1b, c) are NON-conventional, i.e. calculable from the utterance of such sentences in a particular context, given the nature of conversation as a shared goal-oriented enterprise. In both cases, the speaker's implicature of the corresponding primed proposition is cancelable (either explicitly by appending material inconsistent with it – "*but I don't mean to suggest that . . .*" – or by altering the context of utterance) but non-detachable (given that any other way of expressing the literal content of (1b, c) in the same context would license the same inference).[2] What distinguishes (1b) from (1c) is the generality of the circumstances in which the inference is ordinarily licensed. Only when the speaker of (1b) is evaluating the competence of the referent for a philosophy position will the addressee normally be expected to infer that the speaker had intended to convey the content of (1b′); this is an instance of PARTICULARIZED conversational implicature.[3] In (1c), on the other hand, the inference – that the speaker does not know in which of the two locations the cat can be found – is induced in the absence of a special or marked context. The default nature of the triggering in (1c) represents the linguistically significant concept of GENERALIZED conversational implicature. But in both cases, as with conventional implicature, it is crucially not the proposition or sentence, but the speaker or utterance, that induces the relevant implicatum.

The significance of the generalized/particularized dichotomy has been much debated; cf. Hirschberg (1991) and Carston (1995) for skepticism and Levinson (2000a) for a spirited defense.[4] Whatever the theoretical status of the distinction,

it is apparent that some implicatures are induced **only** in a special context (if Mr. Jones had been applying for a job as a personal secretary, Grice's remark in (1b) would have helped, rather than torpedoed, his candidacy), while others go through **unless** a special context is present (as in the utterance of (1c) as a clue in a treasure hunt). The contrast between particularized and generalized implicature emerges clearly in this scene from *When Harry Met Sally* (1989 screenplay by Nora Ephron). Harry (Billy Crystal) is setting up a blind date between his buddy Jess (Bruno Kirby) and his woman friend – but not (yet) girlfriend – Sally (Meg Ryan):

(2) *Jess*: *If she's so great why aren't YOU taking her out?*
Harry: How many times do I have to tell you, we're just friends.
Jess: *So you're saying she's not that attractive.*
Harry: No, I told you she IS attractive.
Jess: *But you also said she has a good personality.*
Harry: She HAS a good personality.
Jess: *[Stops walking, turns around, throws up hands, as if to say "Aha!"]*
Harry: What?
→ *Jess*: *When someone's not that attractive they're ALWAYS described as having a good personality.*
Harry: Look, if you were to ask me what does she look like and I said she has a good personality, that means she's not attractive. But just because I happen to mention that she has a good personality, she could be either. She could be attractive with a good personality or not attractive with a good personality.
Jess: *So which one is she?*
Harry: Attractive.
⇒ *Jess*: *But not beautiful, right?*

Jess's first arrowed observation incorrectly reanalyzes a particularized implicature (S, in describing X to H as having a good personality implicates that X is not attractive) as generalized, to which Harry responds by patiently pointing out the strongly context-dependent nature of the inference in question. To see that this is no isolated example, consider a parallel dialogue from an earlier film, *The Shop Around the Corner* (1940 Ernst Lubitsch screenplay). Kralik (James Stewart) is describing his epistolary inamorata to his colleague Pirovitch (Felix Bressart):

(3) *Kralik*: She is the most wonderful girl in the world.
Pirovitch: *Is she pretty?*
Kralik: She has such ideals, and such a viewpoint of things that she's so far above all the other girls that you meet nowadays that there's no comparison.
→ *Pirovitch*: *So she's not very pretty.*

Like Jess, Pirovitch (who, like Jess above, employs *so* to mark his pragmatic inference) misapplies the (here, tacit) inferential strategy to conclude from Kralik's impassioned (if unparsable) tribute to his love's virtues that she must be physically unprepossessing; in fact, Kralik believes (falsely) that he hasn't yet met her in the flesh, so no such implicature could have been made.

While the inferential step marked by the single arrows is indeed particularized and therefore context-dependent in the strong sense, the inference drawn by Jess at the double arrow is generalized, instantiating SCALAR IMPLICATURE, the upper-bounding of a weak predication ("X is attractive") to convey that the speaker was not in a position to assert any stronger counterpart ("X is beautiful"). The pattern exemplified by Jess's inference, and the reason why Jess is once again wrong to draw it, follow from our later discussion.

To conclude our brief taxonomy of implicature, we should note that despite extensive investigation in work culminating with Karttunen and Peters (1979), conventional implicature remains a controversial domain. While it continues to be invoked to handle non-truth-conditional aspects of lexical meaning, this tends to constitute an admission of analytic failure, a label rather than true explanation of the phenomenon in question. It has on occasion been maintained that conventional implicature is a myth (Bach 1999b), and even for the true believers, the domain in which such implicatures have been posited continues to shrink, eaten away on one side by an increasingly fine-grained understanding of truth-conditional meaning and entailment[5] (a trend begun in Wilson and Sperber 1979; see also Blakemore and Carston, this volume) and on the other by a more sophisticated employment of the tools of conversational implicature. While conventional implicature remains a plausible *faute de mieux* account of particles like *even* and *too*, whose contribution has not convincingly been shown to affect the truth conditions of a given utterance but is not derivable from general considerations of rationality or cooperation, the role played by conventional implicature within the general theory of meaning is increasingly shaky.

2 Speaker Meaning, Inference, and the Role of the Maxims

Whether generalized or particularized, conversational implicature derives from the shared presumption that S and H are interacting rationally and cooperatively to reach a common goal. A speaker S saying p and implicating q can count on her interlocutor to figure out what S meant (in uttering p at a given point in the interaction) from what was said, based on the assumption that both S and H are rational agents. Speakers implicate, hearers infer. While work as distinct as that of Levinson (2000a) and Sperber & Wilson (1986a) often appears to assimilate implicature to non-logical inference, the two phenomena were quite distinct for Grice (1989) (see Bach 2001a and Saul 2002 for discussion). While successful communication commonly relies on implicature,

what a speaker implicates is often quite distinct from what her words imply or from what a hearer may be expected to take from them.

But it is S's assumption that H will draw the appropriate inference from what is said that makes implicature a rational possibility. The governing dictum is the Cooperative Principle: "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange" (Grice [1967]1989: 26).[6] This general principle is instantiated by general maxims of conversation governing rational interchange (1989: 26–7):

(4) QUALITY: Try to make your contribution one that is true.
 1. Do not say what you believe to be false.
 2. Do not say that for which you lack evidence.
 QUANTITY:
 1. Make your contribution as informative as is required (for the current purposes of the exchange).
 2. Do not make your contribution more informative than is required.
 RELATION: Be relevant.
 MANNER: Be perspicuous.
 1. Avoid obscurity of expression.
 2. Avoid ambiguity.
 3. Be brief. (Avoid unnecessary prolixity.)
 4. Be orderly.

The fourfold set of macroprinciples has no privileged status, except as a nod to Kant's own categorical tetralogy. Note in particular that all maxims are not created equal. Following Grice himself –

> The maxims do not seem to be coordinate. The maxim of Quality, enjoining the provision of contributions which are genuine rather than spurious (truthful rather than mendacious), does not seem to be just one among a number of recipes for producing contributions; it seems rather to spell out the difference between something's being, and (strictly speaking) failing to be, any kind of contribution at all. False information is not an inferior kind of information; it just is not information. (Grice 1989: 371)

– many (e.g. Levinson 1983, Horn 1984a) have accorded a privileged status to Quality, since without the observation of Quality, or what Lewis (1969) calls the convention of truthfulness, it is hard to see how any of the other maxims can be satisfied (though see Sperber and Wilson 1986a for a dissenting view).

But the role of the maxims is a more central problem. It is chastening to realize that for all the work inspired by the Gricean paradigm since the William James lectures first circulated in mimeo form among linguists and philosophers in the late 1960s, the nature of the enterprise stubbornly continues to be misunderstood. (See Green 1990 for an inventory of such misunderstandings.) Here is Exhibit A:

> Communication is a cooperative effort, and as such should conform to certain definite rules, or maxims of conversation, which Grice enumerates. The maxims presuppose an almost Utopian level of gentlemanly conduct on the part of a speaker and an old-fashioned standard of truthfulness that George Washington might have found irksome.[7] They remind one of the early Puritanism of the Royal Society. A speaker should give not too much but just enough information, hold his tongue about what he believes to be false, or for which he has insufficient evidence, be relevant, be brief and orderly, avoid obscurity of expressions and ambiguity. . . . Would we want to have dinner with such a person, such an impeccably polite maxim observer? (Campbell 2001: 256)

This passage is taken from Jeremy Campbell's natural history of falsehood, a treatise hailed by reviewers as "carefully researched," "enlightening," and "thought-provoking," an "almost breathless exercise in intellectual synthesis." But it is not just the laity who are at fault; professional linguists and ethnographers, following Keenan (1976), have at times concluded that Grice's maxims are trivial, naïve to the point of simple-mindedness, and/or culture-dependent (if not downright ethnocentric), and that they fail to apply to phatic and other non-information-based exchanges.

But neither the Cooperative Principle nor the attendant maxims are designed as prescriptions for ethical actions or as ethnographic observations.[8] A more accurate approximation is to view them as default settings (or presumptions, à la Bach and Harnish 1979), the mutual awareness of which, shared by speech participants, generates the implicatures that lie at the heart of the pragmatic enterprise. Only if the speaker is operating, and presumes the hearer is operating, with such principles as defaults can she expect the hearer to recognize the apparent violation of the maxims as a source of contextual inference (see Grice 1989, Green 1996a, Levinson 2000a for elaboration). Further, as with presupposition (on the pragmatic account of Stalnaker 1974), conversational implicature operates through the mechanism of EXPLOITATION. Unlike syntactic and semantic rules, pragmatic principles and conventions do as much work when they are apparently violated – when speaker S counts on hearer H to recognize the apparent violation and to perform the appropriate contextual adjustment – as when they are observed or ostentatiously violated.

3 Scalar Implicature and Constraints on Lexicalization

For linguistic pragmatics, the core of the Gricean system is the first Quantity submaxim, which is systematically exploited to yield upper-bounding generalized conversational implicatures associated with scalar values (Horn 1972, 1989; Gazdar 1979; Hirschberg 1991). Under a variety of formulations, this principle and its explanatory potential have long been tacitly recognized,

especially for the interpretation of quantified sentences. Sir William Hamilton (1860: 254) distinguishes two senses of *some*, the INDEFINITE (*at least some*) and the SEMI-DEFINITE (*some but not all*), taking the latter as basic: "Some, if not otherwise qualified, means some only – this by presumption." While acknowledging that such a presumption holds in "common language," De Morgan (1847) offers a proto-Gricean argument for rejecting Hamilton's thesis in favor of the standard practice of relegating the *some* → *not all* inference to an extra-logical domain, as does Mill (1867: 501):

> No shadow of justificaton is shown . . . for adopting into logic a mere sous-entendu of common conversation in its most unprecise form. If I say to any one, "I saw some of your children today", he might be justified in inferring that I did not see them all, not because the words mean it, but because, if I had seen them all, it is most likely that I should have said so: even though this cannot be presumed unless it is presupposed that I must have known whether the children I saw were all or not.

Similarly, while disjunctions are naturally taken exclusively – "When we say A is either B or C we imply that it cannot be both" – this too cannot be a logical inference: "If we assert that a man who has acted in a particular way must be either a knave or a fool, we by no means assert, or intend to assert, that he cannot be both" (Mill 1867: 512).

Notice Mill's epistemic rider in his *unless* clause: S's use of the weaker *some* implicates that **for all S knows** the strongest operator on the same scale, *all*, could not have been substituted *salva veritate*. Mill's tacit principle, with its epistemic condition, is independently invoked by later scholars:

> What can be understood without being said is usually, in the interest of economy, not said . . . A person making a statement in the form, "Some S is P", generally wishes to suggest that some S also is not P. For, in the majority of cases, if he knew that all S is P, he would say so . . . If a person says, "Some grocers are honest", or "Some books are interesting", meaning to suggest that some grocers are not honest or that some textbooks are not interesting, he is really giving voice to a conjunctive proposition in an elliptical way.
>
> Though this is the usual manner of speech, there are circumstances, nevertheless, in which the particular proposition should be understood to mean just what it says and not something else over and above what it says. One such circumstance is that in which the speaker does not know whether the subcontrary proposition is also true; another is that in which the truth of the subcontrary is not of any moment. (Doyle 1951: 382)

The tacit principle to which Mill alludes, requiring S to use the stronger *all* in place of the weaker *some* when possible and licensing H to draw the corresponding inference when the stronger term is not used, later resurfaces within Grice's program as the first Quantity maxim, which is systematically

exploitable to yield upper-bounding generalized conversational implicatures associated with scalar operators. Quantity-based scalar implicature – e.g. my inviting you to infer from my use of *some* . . . that for all I know *not all* . . . – is driven by our presumed mutual knowledge that I expressed a weaker proposition in lieu of an equally unmarked utterance that would have expressed a stronger proposition. Thus, what is said in the use of a weaker scalar value like those in boldface in the sentences of (5) is the lower bound (. . . *at least n* . . .), with the upper bound (. . . *at most n* . . .) implicated as a cancelable inference generated by (some version of) the first maxim of quantity. What is communicated in the default case is the TWO-SIDED UNDERSTANDING that combines what is said with what is implicated.

(5)	ONE-SIDED →	TWO-SIDED
a. Pat has **3** children.	"...at least 3..."	"...exactly 3..."
b. You ate **some** of the cake.	"...some if not all..."	"...some but not all..."
c. It's **possible** she'll win.	"...at least ◊..."	"...◊ but not certain..."
d. He's a knave **or** a fool.	"...and perhaps both"	"...but not both"
e. It's **warm**.	"...at least warm..."	"...but not hot"

The alternative view, on which each scalar predication in (5) is lexically ambiguous between one-sided and two-sided readings, is ruled out by the general metatheoretical consideration that Grice dubs the Modified Occam's Razor principle: "Senses are not to be multiplied beyond necessity" (1989: 47).

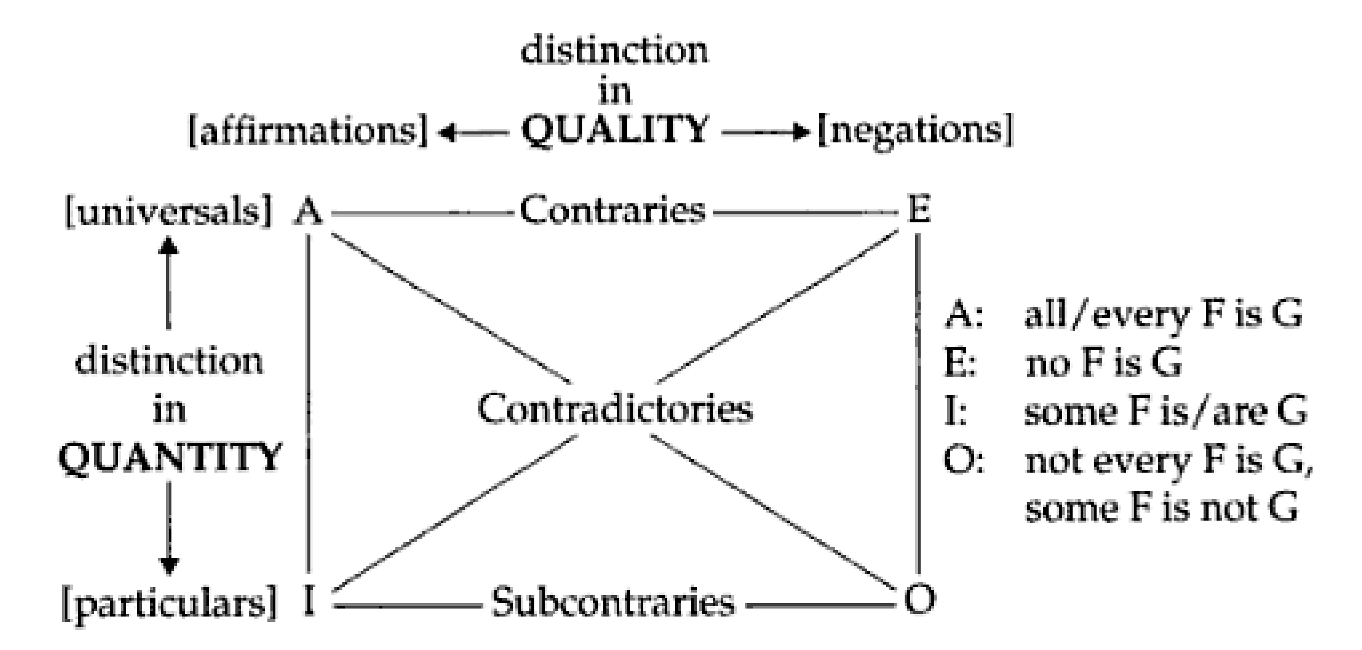
Negating such predications denies the lower bound: to say that something is not possible is to say that it's impossible, i.e. less than possible. When it is the upper bound that appears to be negated (*It's not possible, it's NECESSARY*), a range of syntactic, semantic, and prosodic evidence indicates the presence of the METALINGUISTIC or echoic use of negation, in which the negative particle is used to object to any aspect of an alternate (actual or envisaged) utterance, including its conventional and conversational implicata, register, morphosyntactic form or pronunciation (Horn 1989: Chap. 6; Carston 1996). If it's hot, it's (a fortiori) warm, but if I know it's hot, the assertion that it's warm can be echoed and rejected as (not false but) insufficiently informative:

(6)a. It's not WARM, it's HOT!
  b. You're right, it's not warm. It's HOT!

As seen in (6b), the metalinguistic understanding typically requires a second pass and the effect is typically that of an ironic "unsaying" or retroactive accommodation (Horn 1992).

The central role played by scalar implicature in natural language is illustrated by a systematic pattern of lexical gaps and asymmetries. Consider the post-Aristotelian square of opposition, defined by the logical relations definable between pairs of quantified expressions (ranging over non-empty sets):

(7) Square of Opposition



(7′)
- Corresponding **A** and **E** statements are CONTRARIES; they cannot be simultaneously true (though they may be simultaneously false).
- Corresponding **A** and **O** (and **I** and **E**) statements are CONTRADICTORIES; members of each pair cannot be true OR false simultaneously.
- An **I** statement is the SUBALTERN of its corresponding **A** statement (and **O** of **E**); a subaltern is unilaterally entailed by its corresponding superaltern.
- Corresponding **I** and **O** statements are SUBCONTRARIES and cannot be simultaneously false (though they may be simultaneously true).

Note in particular that the assertion of either of the two subcontraries Quantity-implicates the other. While what is said in *Some men are bald* and *Some men are not bald* is distinct, what is communicated is typically identical: *Some men are bald and some aren't*. Given that languages tend not to lexicalize complex values that need not be lexicalized, particularly within closed categories like quantifiers, we predict that *some . . . not* will not be lexicalized, and this is precisely what we find.

In a wide variety of languages, values mapping onto the southeast, **O** corner of the square are systematically restricted in their potential for lexicalization (Horn 1972, 1989: 4.5). Thus alongside the quantificational determiners *all, some, no,* we never find an **O** determiner **nall;* corresponding to the quantificational adverbs *always, sometimes, never,* we have no **nalways* (= "not always," "sometimes not"). We may have equivalents for *both, one (of them), neither,* but never for **noth* (= "not both," "at least one . . . not"); we find connectives corresponding to *and, or,* and sometimes *nor* (= "and not"), but never to **nand* (= "or not," "not . . . and"). The story of ***O** extends to the modals and deontics, as illustrated by the fact that the inflected negative in *He can't go* and the orthographic lexicalization in *He cannot go* only allows wide-scope (E vertex) negation, while the unlexicalized counterpart *He can not go* is ambiguous. The

relation of mutual quantity implicature holding between positive and negative subcontraries results in the superfluity of one of the two subcontraries for lexical realization, while the functional markedness of negation assures that the unlexicalized subcontrary will always be **O**.

4 Q-based and R-based Implicature: Clash and Resolution

The earliest discussions of scalar quantity implicature were based on the informative content associated with values whose lexical semantics defined the relevant scale: *necessarily p* entails *possibly p* and not vice versa, whence the implicature from the utterance of the latter to the negation of the former. But as Fauconnier (1975b) and especially Hirschberg (1991) have eloquently shown, scales must be essentially pragmatic in nature. Indeed, Hirschberg has demonstrated that not just scales as such but any POSET (partially ordered set) can in principle define a quantity implicature in the right context. Thus if Robin is traveling westward from New York to California, my utterance *Robin has made it to Chicago* will implicate that Robin hasn't made it to Denver, but will not implicate that she hasn't yet reached Cleveland. As usual, such implicatures can be cancelled (*Not only has Robin made it to Chicago, but to Denver*). If Robin were traveling eastward, the facts would be reversed. (See Hirschberg 1991 for extensive elaboration.)

M. Walker (1994) extends Hirschberg's results to show how quantity implicature functions to implicitly reject a proposition consistent with the context (cf. also Horn 1989: 410). Thus, in response to your question, "Is Smith honest and ambitious?" or to your assertion, "Smith is honest and ambitious," my assertion, "He's ambitious" will convey my belief that he's not honest; this proposition is, in Walker's terms, rejected by implicature. (See Ward and Hirschberg 1985, Horn 1989, and M. Walker 1994 on the role of intonation in such examples.) An attested example of the same phenomenon was provided in the exchange in (8) from the Senate investigation of President Clinton. Senator Ed Bryant is interrogating Monica Lewinsky on her affidavit in the Paula Jones case:

(8) Mr. Bryant: "Were portions of it false?"
Ms. Lewinsky: "Incomplete and misleading."

In implicating (but not saying) that no portions of her affidavit were technically false, Lewinsky, in the words of *New York Times* reporter Francis X. Clines (February 6, 1999), "exhibited a Clintonian way with the meaning of words."

Other questions arising in early work on implicature concern the nature and scope of implicature. While the utterance of a weaker scalar value . . . $p(i)$ . . . tends to implicate that the speaker was not in a position to assert the correspondingly stronger value . . . $p(j)$ . . . (thereby implicating against the stronger

value), this tendency is subject to a variety of constraints. The inheritance or projection properties of conversational implicata is a complex matter; it appears (Horn 1989: 234) that scalar implicature is blocked in precisely those environments where "scale reversal" applies, in the context of downward-entailing operators like negation and other negative polarity item (NPI) triggers, whence the disappearance of the upper-bounding implicature (*possible* +> *not certain*) in *If it's possible that it will rain I'll bring an umbrella.* (Chierchia 2001 argues from this correlation for the semantic status of scalar implicature; cf. Sauerland 2001.) Levinson (2000a: 80), on the other hand, has noted that if scale reversal is taken seriously, implicature need not be extrinsically blocked in such environments; rather, it will predictably be associated with the opposite scale, given the generalization that the negation of a weak positive value will constitute a strong value on the corresponding negative scale, and vice versa for the corresponding strong positive, for example (using the standard ⟨STRONGER-VALUE, WEAKER-VALUE⟩ notation), ⟨*certain, possible*⟩ vs. ⟨*not possible, not certain*⟩.

The significance of the first Quantity maxim for the form and function of natural language reflects its status as one of two cardinal principles regulating the economy of linguistic information. Setting Quality aside as unreducible, we can collapse the remaining maxims and submaxims into two fundamental principles corresponding to Zipf's "speaker's and auditor's economies" (1949: 20ff.; cf. Horn 1984a). The Q principle is a lower-bounding hearer-based guarantee of the sufficiency of informative content ("Say as much as you can, modulo Quality and R"); it collects the first Quantity maxim along with the first two "clarity" submaxims of manner and is systematically exploited (as in the scalar cases discussed above) to generate upper-bounding implicata. The R principle, by contrast, is an upper-bounding correlate of the Law of Least Effort dictating minimization of form ("Say no more than you must, modulo Q"); it collects the Relation maxim, the second Quantity maxim, and the last two submaxims of Manner, and is exploited to induce strengthening implicata.[9] Q-based implicature is typically negative in that its calculation refers crucially to what could have been said but wasn't: H infers from S's failure to use a more informative and/or briefer form that S was not in a position to do so. R-based implicature involves social rather than purely linguistic motivation and is exemplified by indirect speech acts and negative strengthening (including so-called neg-raising, i.e. the tendency for *I don't think that* ϕ to implicate *I think that not-*ϕ).

R-based implicata, while calculable, are often not calculated on line; a specific form of expression may be associated with a given pragmatic effect while an apparently synonymous form is not. Thus the question *Can you close the window?* is standardly used to convey an indirect request while *Are you able to close the window?* is not; *I don't guess that* ϕ allows a strengthened "neg-raised" understanding in a proper subset of the dialects for which *I don't think that* ϕ does. These are instances of SHORT-CIRCUITED CONVERSATIONAL IMPLICATURE or STANDARDIZED NON-LITERALITY (cf. Morgan 1978, Bach and Harnish 1979, Bach 1987b, Horn 1989).

The Zipfian character of the implicata generating indirect speech acts was recognized by Searle in his proposal for a condition on directives that "It is not obvious to both S and H that S will do A in the normal course of events":

> I think this condition is an instance of the sort of phenomenon stated in Zipf's law. I think there is operating in our language, as in most forms of human behaviour, a principle of least effort, in this case **a principle of maximum illocutionary ends with minimum phonetic effort**, and I think [this] condition is an instance of it. (Searle 1965: 234–5, my emphasis)

Similar cost/benefit or minimax principles have been proposed by Paul, Zipf, and Martinet (see Horn 1993 for references and discussion) and by Carroll and Tanenhaus (1975: 51): "The speaker always tries to optimally minimize the surface complexity of his utterances while maximizing the amount of information he effectively communicates to the listener." Indeed, the interplay of perspicuity (or clarity) and brevity was a key issue for classical rhetoricians, who advanced their own minimax guidelines:

> If it is prolix, it will not be clear, nor if it is too brief. It is plain that the middle way is appropriate . . . , saying just enough to make the facts plain. (Aristotle, *Rhetoric*, 3.12–3.16)

> *Brevis esse laboro; obscurus fio.* 'I strive to be brief; I become obscure'. (Horace, *Ars Poetica*, l. 25)

> Personally, when I use the term brevity [*brevitas*], I mean not saying less, but not saying more than the occasion demands. (Quintilian, *Institutio Oratio*, IV.ii.41–43)

While the bilateral brevity of Quintilian may seem quirky, it is no more so than current redefinitions of relevance as a minimax equilibrium of effort and effect:

> Human cognitive activity is driven by the goal of maximizing relevance: that is . . . to derive as great a range of contextual effects as possible for the least expenditure of effort. (Carston 1995: 231)

The two antinomic Q and R forces interact definitionally and dynamically, each referencing and constraining the other.[10] Grice himself incorporates R in defining the primary Q maxim ("Make your contribution as informative **as is required**" [here and below, emphasis added]), while Quantity_2 is constrained by Quantity_1[11] and essentially incorporates Relation: what could make a contribution more informative than required, except the inclusion of contextually irrelevant material? This interdependence was noted by Martinich (1980: 218), who urged collapsing Q_1 and Q_2 into a joint maxim dictating that the speaker "contribute as much as, but not more than, is required (for the current

purposes of the exchange)," while rejecting the broader Relation as a "marauding maxim."

The role of relevance and clarity in constraining the informative strength of the Q principle emerges in its various incarnations, beginning with Strawson (1952: 178–9), who credits Grice for his "general rule of linguistic conduct": "One should not make the (logically) lesser, when one could truthfully **(and with greater or equal clarity)** make the greater claim." Grice's (1961: 132) own "first shot" at the relevant rule is bound by a similar rider – "One should not make a weaker statement rather than a stronger one **unless there is a good reason for so doing**" – as are later versions of the principle constructed in the wake of the maxim of quantity:

> Make the strongest possible claim **that you can legitimately defend!**
> RULE OF STRENGTH (Fogelin 1967: 20–2)

> Unless there are outweighing good reasons to the contrary, one should not make a weaker statement rather than a stronger one **if the audience is interested in the extra information that would be conveyed by the latter.**
> (O'Hair 1969: 45)

> Make the strongest relevant claim **justifiable by your evidence.**
> MAXIM OF QUANTITY-QUALITY (Harnish 1976: 362)

The "good reason" for avoiding the stronger scalar value thus may be either qualitative, constrained by truth (S doesn't know that the stronger value is applicable), or quantitative, where both relevance and brevity enter the picture (S doesn't believe the extra information is justified in terms of H's interests or S's own efforts in uttering it). Telling you that my wife is either in the kitchen or the bedroom, I will (*ceteris paribus*) Q-implicate that I don't know that she's in the kitchen – but I can tell you "The kitchen is a mess" without implicating that the bedroom isn't. If you tell me X is possibly true, I will infer you don't know it's true, but if you tell me X is true (e.g. that all bachelors are unmarried), I will not infer you don't know it's necessarily true. The use of a weak **I** or **O** proposition licenses the inference that the speaker was not in a position to use the basic unquantified, unmodalized proposition that unilaterally entails it, as the Q principle predicts, but the use of the basic propositional form does not Q-implicate the negation of its strong counterpart, **A** or **E** respectively. Since there is no quantity- or information-based distinction between these (sub)subalternations, we must seek the source of the asymmetry elsewhere.

The crucial distinction here relates not to the content (what is said) but to the form (how what is said is said). Because the basic forms are not only more informative but briefer than their **I/O** counterparts, the use of the latter will strongly implicate against the former. But the strong values, while more informative than their unmodified counterparts, are also more prolix, so Quantity is offset by Manner and potentially by Relation: the Q principle of

informative sufficiency yields to the R principle of least effort. The richness of the pragmatic framework allows us to predict not just what can be implicated but what will be implicated in a given context.

When degree of lexicalization is not a factor, scalar implicature is normally generated. Thus, each of the ordered n-tuples of items in (9)

(9) ⟨*always, usually, often, sometimes*⟩, ⟨*and, or*⟩, ⟨*certain, likely, possible*⟩, ⟨*cold, cool, lukewarm*⟩, ⟨*excellent, good, OK*⟩, ⟨*the, a*⟩

constitutes a Q-relevant scale in that the affirmation of any weak or intermediate value will implicate (*ceteris paribus*) that – for all the speaker knows – the value(s) on its left could not be substituted *salva veritate.*

But when the stronger value is less economical than the weaker one, no Q-implicature is triggered. Thus the apparent symmetry of the relevant scales – ⟨*x and y won, x won, x or y won*⟩, ⟨*a must be F, a is F, a may be F*⟩ – is misleading. This extends to non-quantitative "scales" of items differing in informative strength. Thus, while the use of *finger* typically conveys "non-thumb," it does not convey "non-pinky (finger)," nor does the use of *toe* convey "non-big toe," although the big toe is an analogue of the thumb. Crucial here is the status of *thumb* (as opposed to *pinky*) as a lexicalized alternative to *finger*. In the same way, *rectangle* conveys "non-square" (i.e. "non-equilateral rectangle") given the availability of the lexicalized alternative *square*, while *triangle* does not convey "non-equilateral triangle" – indeed, the prototype triangle IS equilateral – because of the non-existence of a lexicalized counterpart.

One robust linguistic phenomenon involving the interaction of Q and R principles is the DIVISION OF PRAGMATIC LABOR. Given two expressions covering the same semantic ground, a relatively unmarked form – briefer and/or more lexicalized – tends to be R-associated with a particular unmarked, stereotypical meaning, use, or situation, while the use of the periphrastic or less lexicalized expression, typically more complex or prolix, tends to be Q-restricted to those situations outside the stereotype, for which the unmarked expression could not have been used appropriately.[12] Thus consider the following pairs:

(10)a. He got the machine to stop.
He stopped the machine.
b. Her blouse was pale red.
Her blouse was pink.
c. She wants her to win.
She wants PRO to win.
d. I am going to marry you.
I will marry you.
e. My brother went to the church (the jail, the school).
My brother went to church (jail, school).
f. It's not impossible that you will solve the problem.
It's possible that you will solve the problem.

g. That's my father's wife.
   That's my mother.

The use of the periphrastic causative in (10a) implicates that the agent achieved the effect in a marked way (pulling the plug, throwing a shoe into the machine), *pale red* in (10b) suggests a tint not pre-empted by *pink*, the choice of a full pronoun over null PRO in (10c) signals the absence of the coreferential reading associated with the reduced syntax, the periphrastic form blocks the indirect speech act function of promising conveyed by the modal in (10d), the full Det-N versions of (10e) imply literal motion toward the specified location without the socially stereotypic connection that is R-associated with the corresponding institution on the anarthrous version, the double contradictory negation in (10f) signals a rhetorical effect absent from the direct positive, and the more complex description in (10g) suggests that the more basic and lexicalized alternative could not have been used appropriately (the referent is probably the speaker's stepmother). When a speaker opts for a more complex or less fully lexicalized expression over a simpler alternative, there is a pragmatically sufficient reason, but which reason depends on the particular context. (See Horn 1991a, 1993, Levinson 2000a, and Blutner and Traugott, this volume, for references and related discussion.)

A particularly rich explanatory vein lies in the realm of anaphora, in which the choice of an overt pronoun over controlled PRO in infinitivals in both English object raising (ECM) and Romance subjunctive constructions can be attributed to the division of pragmatic labor, as can switch-reference phenomena and the use of an overt subject in a pro-drop (null-subject) language like Turkish or Catalan, in which the overriding of "Avoid Pronoun" will often implicate change of topic. Valuable cross-linguistic studies of the neo-Gricean pragmatics of anaphora, with copious references, are provided in Levinson (2000a: Chapter 4) and Huang (2000a, this volume).

5 Implicature, Explicature, and Pragmatic Intrusion

Where the model we have been exploring retains two antinomic principles Q and R along with an unreduced maxim of Quality, and where the related model of neo-Gricean pragmatics urged by Levinson (2000a) contains the three Q, I, and M heuristics, a more radical simplification has been urged in the framework of relevance theory, in which a reconceptualized Principle of Relevance is taken to be the sole source of pragmatic inference.[13] At the heart of this program is a reworking of the architecture of the theory of logical form and utterance interpretation (Sperber and Wilson 1986a; cf. also Carston 1998b, this volume; Wilson and Sperber, this volume).

Even for Grice, propositional content is not fully fleshed out until reference, tense, and other indexical elements are fixed. But, taking their lead from earlier

work by Atlas (1979), relevance theorists have argued that the pragmatic reasoning used to compute implicated meaning must also be invoked to flesh out underspecified propositions in which the semantic meaning contributed by the linguistic expression itself is insufficient to yield a proper accounting of truth-conditional content. Thus, to take one example, when a pundit observed, as the jury retired to consider their verdict in the O. J. Simpson murder trial, that "It will take them some time to reach a verdict," the proposition he communicated (that it will take a long time) seems intuitively false, a fact hard to reconcile with a strict Gricean analysis on which the time communicated by S is merely an implicatum read off the underspecified content contributed by linguistic meaning alone, i.e. a trivially true existential proposition. Apparently the pragmatically strengthened communication contributes to, or intrudes upon, the propositional content.

A classic example of such apparent intrusion is illustrated by the temporal and causal asymmetry of conjoined event-denoting VPs and sentences. The logical "&" is a symmetric truth function; "p & q" is true if p and q are both true and false otherwise (as, of course, is "q & p"). Strawson (1952: 80) pointed to the apparent contrast in meaning exhibited by pairs like (11a, b)

(11)a. They got married and (they) had a child.
b. They had a child and (they) got married.
c. They got married and then (they) had a child.

as prima facie counterexamples to this thesis, since the former appears to amount to the statement in (11c). (I add the parenthetical pronoun to render these sentences closer to the corresponding logical conjunctions, although that renders the asymmetric understanding less inevitable.) Similarly, Ryle (1954) famously observed that to get on one's horse and ride away is not the same as to ride away and get on one's horse. For Urmson (1956: 9–10), however, the truth-functional picture, while incomplete, is not ipso facto incorrect:

> In formal logic, the connectives "and" and "or" are always given a minimum meaning . . . such that any complex formed by the use of them alone is a truth-function of its constituents. In ordinary discourse the connectives often have a richer meaning; thus "he took off his clothes and went to bed" implies temporal succession and has a different meaning from "he went to bed and took off his clothes". Logicians would justify their use of the minimum meaning by pointing out that it is the common element in all our uses of "and."

For the classical Gricean approach, an assertion of the conjunction in (11a) will implicate (11c) by virtue of the Manner submaxim "Be orderly" (Grice 1981: 186). Indeed, Grice's approach was prefigured in the observation that "Events earlier in time are mentioned earlier in the order of words than those which occurred later," one of the eight "natural principles" that influence word order in the inventory of Dionysius of Halicarnassus, *Peri syntheseos*

onomaton (*On the Juxtaposition of Words*), first century BC, cited in de Jonge (2001).

On this Dionysian/Gricean line, the distinction in meaning between (11a, b) need not be laid at the doorstep of an ambiguous *and* operator. For those who would semanticize temporal asymmetry, such a lexical ambiguity must be invoked for the fact that a non-sequential interpretation is available not only for non-eventive sentences (*They are tall and they are rich*) but even for (11a) in the appropriate context ("What stressed them out last year?"). Arguments against a lexical ambiguity for *and* ("and also" vs. "and then") include the following:

1 On the two-*and* theory, conjunction in (almost?) every language would just happen to be similarly ambiguous.
2 No natural language contains a conjunction *shmand* that would be ambiguous between "and also" and "and earlier" readings so that *They had a baby shmand they got married* would be interpreted either atemporally or as "They had a baby and, before that, they got married."
3 Not only temporal but causal asymmetry would need to be built in, as a variety of apparent strengthenings of the conjunction arise in different contexts of utterance.
4 The same "ambiguity" exhibited by *and* arises when two clauses describing related events are juxtaposed asyndetically (*They had a baby. They got married.*)

However, if conjuctions are semantically univocal while Manner- (or R-) implicating that the events occurred in the order in which they were described, the impossibility of the conjunction *shmand* can be attributed to the absence of any maxim enjoining the speaker to "Be disorderly." As with scalar implicature, the asymmetric implicatum may be canceled or suspended: *They had a baby and got married, but not necessarily in that order.*

But if the "and then" reading comes in only as an implicature, it is hard to explain its apparent contribution to truth-conditional meaning in embedded contexts, and in particular the non-contradictory nature of (12a–c) as pointed out by Cohen (1971) and Wilson (1975):

(12)a. If they got married and had a child, their parents will be pleased, but if they had a child and got married their parents will not be pleased.
b. They didn't get married and have a child; they had a child and got married.
c. It's more acceptable to get married and have a child than to have a child and get married.

One possible conclusion is that while pragmatically derived, the enriched meaning is an EXPLICATURE, corresponding to what is said rather than to what is (merely) implicated[14] (see Carston, this volume); another is that we must

revisit the architecture of Gricean theory to allow implicature to help determine propositional content (Levinson 2000a: chapter 3).

The explicature view also yields a re-evaluation of the traditional view of scalar predications, so that both one-sided and two-sided understandings of sentences in (5) will now be directly represented at the level of logical content. While such scalar predications are now all taken to be ambiguous, the ambiguity is situated not at the lexical but at the propositional level: what is **said** in an utterance is systematically underdetermined by the linguistic content of what is **uttered**. In particular, it does not seem possible to maintain the original Gricean line on the meaning of cardinal operators (lower-bounded by meaning, upper-bounded by implicature).

However, while a strong case can be made for an enrichment analysis of the meaning contribution of the cardinals, it does not generalize straightforwardly to the inexact scalar values. Evidence for this asymmetry (summarized in Horn 1992) comes from the contextual reversibility of cardinal scales and the non-implicating ("exactly n") reading of cardinals in mathematical, collective, and elliptical contexts, none of which applies to the scalar operators in, for example, (5b–e). Note also the contrast in the exchanges below:

(13) A: Do you have two children?
B_1: No, three.
B_2: ?Yes, (in fact) three.

(14) A: Did many of the guests leave?
B_1: ?No, all of them.
B_2: Yes, (in fact) all of them.

Further, a bare negative response to (13A) is compatible with an "exactly n" reading in an appropriate context (if B believes A is interested in precisely how many children B has, rather than in B's candidacy for a subsidy), while an unadorned negative response to (14A) can only be understood as conveying "fewer than many." In the same way, there is a sharp contrast between the "game-playing" nature of (15a), with ordinary scalar *like*, and the straightforward (15b), with cardinal values:

(15)a. #Neither of us liked the movie – she adored it and I hated it.
b. Neither of us has three kids – she has two and I have four.

Similarly, if (5e) were truly propositionally ambiguous, there is no obvious reason why a *"No"* response to the question *"Is it warm?"* should not be interpretable as a denial of the enriched, two-sided content and thus as asserting that it's either chilly or hot, or why the comparative in *"It's getting warmer"* cannot denote "less hot" instead of "less cold." This suggests the need for a mixed theory in which cardinal values may well demand an enriched-content analysis, while other scalar predications continue to warrant a standard neo-Gricean treatment on which they are lower-bounded by their literal content and upper-bounded, in default contexts, by Q-implicature.

Standard critiques (e.g. Carston 1988, Recanati 1989) of traditional Gricean accounts of scalar implicature can be countered if this distinction between

cardinals and other scalar values is maintained. Nor is it surprising to see the same distinction surfacing as significant in early childhood, as has been supported by recent work in developmental psycholinguistics (Papafragou and Musolino 2003).

6 Implicature vs. Impliciture: "What is said" Revisited

But are we really dealing with post-semantic implicature here in the original Gricean sense, or with a different aspect of what isn't said? The arguments we have been reviewing rest on the tacit assumption that whatever is communicated but not said must be implicated. Some (e.g. Levinson 2000a) have argued from this assumption that implicatures can affect ("intrude on") truth-conditional meaning after all, given cases like the asymmetric conjunction in (11); others have argued instead for the notion of explicature, i.e. pragmatically determined content. But what if not all implicit components of communicated meaning are implicatures? As stressed by Bach (1994a, 2001a), some aspects of speaker meaning need not be considered either part of what is implicated or of what is said. Thus consider the following utterances with the typically conveyed material indicated in curly brackets:

(16)a. I haven't had breakfast {today}.
b. John and Mary are married {to each other}.
c. They had a baby and they got married {in that order}.
d. Robin ate the shrimp and {as a result} got food poisoning.
e. Everybody {in our pragmatics class} solved the riddle.

In each case, the bracketed material contributing to what is communicated cannot be derived as a Gricean implicature (*pace* Levinson 2000a: chapter 3), given that it is truth conditionally relevant, but neither can it be part of what is said, since it is felicitously cancelable:

(17)a. John and Mary are married, but not to each other.
b. They had a child and got married, but not necessarily in that order.

Bach has proposed that in such cases the enriched material may be regarded instead as an IMPLICITURE, an implicit weakening, strengthening, or specification of what is said. This permits an intuitive characterization of propositional content, a conservative mapping from syntactic structure to what is said, and an orthodox Gricean conception of implicature, albeit as a more limited construct than in much neo-Gricean work. While Levinson (2000a) bites the bullet and, accepting the relevance theorists' arguments for pragmatic intrusion into propositional content, concludes that implicatures must feed truth-conditional

interpretation, Bach retains a neo-classically Gricean semantic characterization of what is said,[15] along with a post-semantic understanding of conversational implicature: it is implicItures, not implicAtures, that can determine the relevant truth conditions in such cases. Furthermore, it is misleading to take the expansions in (16) to be explicatures, since there is nothing explicit about them, and indeed the cancelability of such expanded understandings supports their status as implicit. At the same time, the standard view that every sentence expresses exactly one proposition must be abandoned, as it is typically and in some cases ONLY the impliciture – the expanded proposition that the speaker communicates but does not directly express – that is plausibly assessed for truth or falsity.[16]

Others have reached similar conclusions by different routes. Taylor (2001) stresses the role of beliefs about the world to explain why enrichment proceeds differently in contexts like *I haven't had breakfast* vs. *I haven't had sex*, although this too could (predictably) change in a culture in which it is expected that one has sex (but not necessarily breakfast) each morning. Saul (2002) has argued persuasively that the (neo-)Gricean and relevance theoretic conceptions of meaning are not as incompatible as it may appear, given that Grice's concerns lay in an account of speaker meaning (of which implicature constitutes a proper subpart), while relevance theorists have been primarily concerned with developing a cognitive psychological model of utterance interpretation, which does not address the question of how and why the speaker, given what she wants to convey, utters what she utters. Inevitably, the two goals must part company, as Saul demonstrates in some detail. While there is a natural tendency to characterize Grice's project in terms of the plausible interpretation of utterances (whence Levinson's 2000a depiction of generalized conversational implicatures as default inferences), it must be resisted, as Bach and Saul have argued.

As for pragmatic intrusion into propositional content and the determination of truth conditions, it should be noted that the Cohen-type argument for the intrusion of temporal asymmetry into the compositional meaning of conditionals (as in (18a) vs. (18b)) can be paralleled by other cases suggesting that all natural language epistemic conditionals are *ceteris paribus* claims; the statements in (19b–d) are no better candidates for valid inferences from (18a) than is (19a).

(18)a. If Annie got married and had a baby, her grandfather will be happy.
b. If Annie had a baby and got married, her grandfather will not be happy.

(19) If Annie got married and had a baby
a. but in the opposite temporal order
b. but her baby was born a week after the wedding
c. but her husband was not the father of the baby
d. but she married Sue and had the baby by artificial insemination her grandfather will be happy.

Similarly, consider the conditionals in (20), in which an explicature theorist would build the stronger (bilateral) meaning (e.g. *some but not all, warm but not very warm*) into what is said:

(20)a. If some of my friends come to the party, I'll be happy – but if all of them do, I'll be in trouble.
b. If it's warm, we'll lie out in the sun. But if it's {very warm/hot}, we'll go inside and sit in front of the air-conditioner.
c. If you're convicted of a felony, you'll spend at least a year in jail. And if you're convicted of murder, you'll be executed.
d. If you're injured, the paramedics will take you to the nearest trauma center. But if you're fatally injured, you'll be taken to the morgue.

In each of these contexts, it's only when the stronger scalar is reached that the earlier, weaker one is retroactively accommodated, as it were, to incorporate an upper bound into its semantics, with, for example, "some" being REinterpreted as expressing (rather than merely communicating) "some but not all." This reinterpretation is facilitated by the obligatory focus on the relevant scalar operators (*some, warm,* etc.).

The same issues arise for other applications of the pragmatic intrusion argument. Thus, Levinson (2000a: 210) extends the classic Cohen–Wilson argument from conditionals like (18) to the *because* clauses of (21):

(21)a. Because he drank three beers and drove home, he went to jail.
b. Because he earns $40,000, he can't afford a house in Palo Alto.
c. Because he's such a fine friend, I've struck him off my list.
d. Because the police recovered some of the missing gold, they will later recover it all.

But these examples are heterogeneous. (21a) sports the familiar temporal strengthening, while (21b) involves a cardinal, which as we have seen is plausibly reanalyzed as involving an adjustment of what is said. The example of "such a fine friend" in (21c), on the other hand, involves conventionalization of the sarcastic meaning; cf. *?Because he's so considerate, I fired him*. The *all* in the second clause of (21d) forces the reprocessing of the *some* in the first clause as "some but not all" (a reprocessing again triggered by the focal stress on *some*); in the other examples, the general context alone is sufficient to force the narrowed interpretation. Without the *all* or a similar context-forcing continuation, this narrowing appears to be impossible:

(22) Because the police recovered some of the gold, the thieves are expected to return later #(for the rest).

In general, such *because* cases are quite constrained, in particular for the non-cardinal scalar cases in which the implicated upper bound is taken to be the

reason for the truth of the second clause (as in (22)) and in which no reprocessing is forced by the affirmation of a stronger value. Thus consider:

(23)a. #Because it's warm out [i.e. because it's warm but not hot], you should still wear a long-sleeved shirt.
b. #Because you ate some of your spinach [i.e. and not all], you don't get dessert.

Of course, a move from *warm* or *some* to *only warm* or *just some* render these causals impeccable, but then the scales have been reversed.

7 Implicature, Cooperation, and Rationality

As we have seen, Paul Grice's pragmatic framework in general, and the elaboration of conversational implicature in particular, are founded on the Cooperative Principle. But while cooperation is a key notion, the role of an even more general principle has not always been fully appreciated. Describing the maxims of conversation, Grice cites the basis of rationality as the reason his program extends beyond communication to non-linguistic interchanges:

> As one of my avowed aims is to see talking as a special case or variety of **purposive, indeed rational behavior**, it may be worth noting that the specific expectations or presumptions connected with at least some of the foregoing maxims have their analogues in the sphere of transactions that are not talk exchanges. (Grice 1989: 28; emphasis added)

As Smith (1999: 15) has noted, the Cooperative Principle need not be stipulated as an arbitrary convention (cf. Lewis 1969), but rather constitutes "a deduction from the general principle that we expect others to behave as best suits their goals."[17] The role of rationality in pragmatics has been stressed by Kasher (1982: 32), whose PRINCIPLE OF EFFECTIVE MEANS stipulates "Given a desired end, one is to choose that action which most effectively, and at least cost, attains that end, *ceteris paribus*." It will be noted that Kasher's principle incorporates the minimax of effort and cost that also underlies models as diverse as the apparently monoprincipled relevance theory (Sperber and Wilson 1986a), the dual Q- and R-based approach of Horn (1984a, 1993), and the tri-heuristic Q/I/M theory of Levinson (2000a).

In particular, the speaker's and hearer's joint (though tacit) recognition of the natural tendency to avoid unnecessary effort, and the inferences S expects H to draw from the former's efficient observance of this tendency, are more explicable directly from rationality than from cooperation as such. While Grice (1989: 28) describes how the maxims apply to cooperative ventures outside of language (baking a cake, fixing a car), collaboration need not be present, much

less communication, at least for the quantity maxims. It seems plausible to assume that the generalized forms of both Q and R principles – "Do enough; Don't do too much" – govern ANY goal-oriented activity: a person brushing her teeth or working out a problem in the philosophy of language, a dog digging a hole to bury a bone. In this way, the maxim of quantity, in both its opposed (Q and R) subforms, is a linguistic instantiation of these rationality-based constraints on the expenditure of effort. Of course, as Grice recognized, the shared tacit awareness of such principles to generate conversational implicatures is a central property of speaker meaning within the communicative enterprise.

With a fuller understanding of the interaction of pragmatics and propositional content, we see that while the explanatory scope of conversational implicature may have been reduced from the heyday of the classical Gricean program, his framework and the pragmatic principles motivating it – rationality, common ground, and the distinction of implicit vs. explicit components of utterance meaning – continue to play a key role in the elaboration of dynamic models of context. As recent work on language acquisition (Noveck 2001, Chierchia et al. 2001, Papafragou and Musolino 2003)[18] and on lexical change (Traugott and Dasher 2002; Traugott, this volume) has further demonstrated, a suitably refined and constrained notion of conversational implicature remains at the heart of linguistic pragmatics.[19]

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NOTES

1 To say that an implicature (conventional or conversational) makes a non-truth-conditional contribution to an expression's meaning is not to say that the implicatum itself (= what is implicated) lacks truth conditions, but rather that the truth conditions of the original expression are not affected by the truth or falsity of the implicatum.

2 Beyond cancelability and non-detachability, another proposed criterion for conversational implicature is non-redundant reinforceability. Sadock (1978) argues that an inference can be non-redundantly reinforced just in case it can be canceled without contradiction, viz. when it is a conversational implicature (see also Morgan 1969, Horn 1972). Thus we

have the contrast between (i) and (ii):

(i)a. Some men are chauvinists; indeed all are. [non-contradictory]
b. Some but not all men are chauvinists. [non-redundant]
(ii)a. #It's odd that dogs eat cheese, and they don't. [contradictory]
b. #It's odd that dogs eat cheese, and they do. [redundant]

But concession/affirmation structures *can* be felicitous even when informationally redundant provided the two clauses involved are rhetorically opposed – whence the adversative *but*:

(iii)a. It's (#not) odd that dogs eat cheese, but they do.
b. I #(don't) know why I love you, but I do.

Thus, contra Sadock, and Hirschberg (1991), semantically inferrable (entailed or presupposed) material may be felicitously reinforced. (See Horn 1991b for details.)

3 Although the "Gricean letter of recommendation" in (1b) has become legendary, it appears not to be legal in the very state in which Grice taught:

> **If an employer chooses to provide a reference or recommendation, the reference giver must include factual negative information that may be material to the applicant's fitness for employment in addition to any positive information.** Campus managers and supervisors who provide employment references on current or former employees must be aware that untrue, incomplete or misleading information may cause a different liability – negligent referral. The court in Randi M. v. Livingston Union School District, 1995 . . . found that: **"A statement that contains only favorable matters and omits all reference to unfavorable matters is as much a false representation as if all the facts stated were untrue."** [Emphasis added; *gratia* Bill Ladusaw]

4 For Davis (1998: 21), a particularized implicature reflects speaker implicature, while a generalized implicature is sentence implicature: "what speakers using the sentence with its regular meaning would commonly use it to implicate" (Davis 1998: 6). See Saul (to appear) for commentary.

5 Horn (to appear) argues for a distinction between what is entailed and what is asserted; entailed material that is not asserted (like the positive component of *Bush barely carried any northern states* or *Only Chris has ever been to Bhutan*) is ASSERTORICALLY INERT and plays no role in NPI licensing. On this account, scopal patterns taken to be diagnostic for conventional implicature or pragmatic presupposition are reanalyzed as diagnostics for non-assertion. See also Abbott (2000).

6 Grice (1989: 30–1) characterizes conversational implicature as follows: "A man who by saying that *p* has implicated that *q*, provided that (1) he is to be presumed to be observing the conversational maxims, or at least the Cooperative Principle; (2) the supposition that he is aware that, or thinks that, *q* is required in order to make his saying . . . *p* consistent with this presumption; and (3) the speaker thinks (and would expect the hearer to think that the speaker thinks) that it is within the competence of the hearer to work out, or grasp

intuitively, that the supposition mentioned in (2) is required." Many such implicatures will constitute non-literal or indirect speech acts overlaid on what is said; see Bach and Harnish (1979), Bach (this volume), and Sadock (this volume) for discussion, and Davis (1998) for vigorous critique.

7 Washington in fact promulgated his own set of maxims with close parallels to Grice's (see Horn 1990), but the father of his country did not account for his countrymen's ability to exploit these maxims to generate implicatures, while the father of pragmatics did.

8 As Smith (1999) points out, Keenan's central critique (1976: 79) that for Grice "the conversational maxims are not presented as working hypotheses but as social facts" should be reversed, with a twist: the maxims are indeed working hypotheses, but for the speaker (and indirectly the hearer), rather than for the philosopher, linguist, or anthropologist. Keenan's depiction of cases where the maxim of quantity is overridden by cultural taboos in fact supports rather than refutes the Gricean narrative, since her evidence shows that it is just when the maxims are predicted to be in operation that they can be exploited to generate implicata; cf. Prince (1983), Brown and Levinson (1987: 288–9) for further discussion.

9 In Levinson's work (Atlas and Levinson 1981; Levinson 1983, 2000a), the counterpart of the R principle is the I (for "Informativeness") heuristic; see Huang (this volume) for a definition and application to the characterization of anaphoric relations.

10 Recent work has incorporated the dialectic of Q- and R-based implicature and the division of pragmatic labor into models of bidirectional Optimality Theory and game theory; cf. Blutner (1998; this volume) and van Rooy (to appear a).

11 Consider the boldened portion of the two submaxims of quantity –

1. Make your contribution **as informative as** is required (for the current purposes of the exchange).
2. Do **not** make your contribution **more informative than** is required.

– in light of the fact that (as noted in Horn 1972) an equative of the form *X is as A as Y* (e.g. *Robin is as tall as Sandy*) will Q_1-implicate that (for all I know) *X is not A-er than Y* (e.g. *Robin is not taller than Sandy*), given the ⟨more A than, as A as⟩ quantity scale. Thus, the utterance of Q_1 as stated will (auto-)implicate Q_2. As Gregory Ward points out, a similar auto-implicature can be detected in Martinich's duplex quantity maxim.

12 Levinson's (2000a) version of the Division of Pragmatic Labor involves not Q-narrowing but what he calls the M(anner) heuristic. He argues that the notion of minimalism involved in the inference from *some* to *not all* is defined in terms of an informational measure rather than complexity of production or processing; because of the apparent role of Manner in the latter case, Levinson refers to the Division of Labor as M-based (Q/M in Levinson 1987a), with Q reserved for pure scalar cases. As he acknowledges, however, the two patterns are related, since each is negatively defined and linguistically motivated: H infers from S's failure to use a more informative and/or briefer form that S was not in a

position to do so. R/I-based implicature is not negative in character and tends to be socially rather than linguistically motivated.

13 As noted above, relevance theory is predicated on a minimax or cost/benefit relation which takes the goal of communication as maximizing contextual effects while minimizing processing effort, and the Principle of Relevance is itself couched in terms of this trade-off of effort and effect. In this sense, relevance theory is a dialectic model as much as that of Horn (1984a, 1993), although the former model associates effort with the hearer rather than the speaker.

14 While (12b) may be attributed to metalinguistic negation (Horn 1989: 373), this analysis is unavailable for (12c).

15 Bach (2001a) adopts the SYNTACTIC CORRELATION CONSTRAINT, based on the position of Grice (1989: 87) that what is said must correspond to "the elements of [the sentence], their order, and their syntactic character"; typical aspects of enriched content that are not directly linked to the utterance cannot be part of what is said.

16 Those enrichments constituting necessary conditions for the expression of truth-evaluable propositions involve what Recanati (1989, 2002a) has called saturation. In such cases, there is a "bottom-up" process triggered by such linguistic elements as genitives (*John's car* – the one he owns? is driving? following? painting? repairing?), unspecified comparison sets (*Chris is tall* – for an adult (fe)male? adult American? human?) or other expressions with free variable slots: *Kim is ready* (for what?), *Robin is too short* (for what?). See Bach (1994a, 1994b) and Carston and Recanati (this volume) for related discussion.

17 Kent Bach points out the plausible invocation here of the reformulation of the Cooperative Principle (CP) as a communicative presumption: when people converse, they do so with an identifiable communicative intention (Bach and Harnish 1979: 7). The role of rationality and cooperation is also addressed in McCafferty (1987).

18 One interesting result from this work is that children may be more adept than adults at distinguishing the contributions to overall speaker meaning contributed by what is said vs. what is implicated.

19 Davis (1998) offers a wide-ranging attack on the theory of implicature; cf. Saul (to appear) for an assessment. See also R. Walker (1975), Wilson and Sperber (1981), Neale (1992), and Matsumoto (1995) for further critical commentary, and Levinson (2000a) for a conspectus and comprehensive bibliography.

2 Presuppositiоn

JAY DAVID ATLAS

1 Frege on Semantical Presupposition

One of Frege's employments of the notion of presupposition occurs in a footnote to a discussion of adverbial clauses in "On Sense and Reference" (1892). Frege (1892: 71) wrote:

> The sense of the sentence "After Schleswig-Holstein was separated from Denmark, Prussia and Austria quarreled" can also be rendered in the form "After the separation of Schleswig-Holstein from Denmark, Prussia and Austria quarreled". In this version it is surely sufficiently clear that the sense is not to be taken as having as a part the thought that Schleswig-Holstein was once separated from Denmark, but that this is the necessary presupposition in order for the expression "after the separation of Schleswig-Holstein from Denmark" to have a reference at all.

I shall call this notion of Frege's "referential presupposition." Since Frege took places, instants of time, and time intervals to be logical objects, to be designated by singular terms, if there had been no event of Schleswig-Holstein's separating from Denmark, there could be no specification of a time at which Prussia and Austria quarreled as after the time of the alleged separation of Schleswig-Holstein from Denmark. The existence of a time at which Schleswig-Holstein separated from Denmark is required in order to give a reference to a singular term designating a time interval that would include a time or temporal subinterval at which Prussia and Austria quarreled. Thus, if the logical form of the main clause *Prussia and Austria quarreled* is:

(1) $\exists t Q(p, a, t)$
There is some time or time-interval at which Prussia and Austria quarreled.

one way to understand the semantical effect of a subordinate clause is for it to determine the relevant domain of temporal instants or intervals that fixes the

truth conditions of the main clause. If the domain is restricted to times later than the time t_s of the separation of Schleswig-Holstein from Denmark, then the logical form of *Prussia and Austria quarreled after the separation of Schleswig-Holstein from Denmark* would be (2):

(2) $\underset{t \in T}{\exists t} Q(p, a, t)$

where $T = \{t: t > t_s\}$. The truth of the clause *Schleswig-Holstein separated from Denmark at t_s* is then a **semantical determinant** of the truth conditions of the original sentence, since it specifies the domain of quantification T (Thomason 1973: 302). In such circumstances it is understandable that Frege (1892: 71) should write of someone who believes that it is false that Schleswig-Holstein was separated from Denmark, so that the domain of quantification of (2) is believed to be ill-defined:

> He will take our sentence . . . to be neither true nor false but will deny it to have any reference [on Frege's view, a truth value], on the ground of absence of reference for its subordinate clause.

It is clear that on Frege's semantical account of presupposition, on which the falsity of a presupposition entails the lack of truth value of the sentence with that presupposition, the negative sentence *Prussia and Austria did not quarrel after the separation of Schleswig-Holstein from Denmark* would have the logical form (3):

(3) $\neg \underset{t \in T}{\exists t} Q(p, a, t)$

The negative sentence preserves the presupposition that there was a time at which Schleswig-Holstein was separated from Denmark, since the specification of the domain of quantification is antecedent to the assignment of truth conditions to the negative sentence. Thus the notion of a semantical presupposition as a semantical determinant of the truth value of the sentence possessing the presupposition offers one explanation of the preservation of the presupposition under ordinary, linguistic negation.

The invariance of presupposition under negation is also noted by Frege in an example sentence that contains a proper name and a one-place predicate, but his discussion of this example has features notably distinct from the example just discussed. It raises a number of questions about negation that recur in the discussion of presupposition.

2 The Alleged Ambiguity of Negation and the Contrasts among Presupposition, Assertion, and Direct Entailment

For Frege a logically perfect language would be one in which each well-formed singular term designates an object. In ordinary, logically imperfect languages, singular terms do not satisfy this requirement, e.g. *Vulcan* and *the cold-fusion reaction* are not guaranteed a reference merely by virtue of being singular terms in the language. Frege (1892: 69) claims:

> If anything is **asserted** there is always an obvious presupposition that the simple or compound proper names used have reference. If one therefore **asserts** "Kepler died in misery," there is a presupposition that the name "Kepler" designates something; but it does not follow that the sense of the sentence "Kepler died in misery" contains the thought that the name "Kepler" designates something. If this were the case the negation would have to run not:
>
> Kepler did not die in misery
>
> but:
>
> Kepler did not die in misery, or the name "Kepler" has no reference.
>
> That the name "Kepler" designates something is just as much a presupposition for the **assertion** [my emphasis]:
>
> Kepler died in misery
>
> as for the contrary assertion.

In this passage Frege claims that the presupposition of an **assertion** and of its main-verb negation are the same, and he offers an argument to support it.

It is evident from his argument that the notion of ⟨*P* contains a thought *Q*⟩ was assumed by Frege to be representable by ⟨*P* contains a conjunct *Q*⟩ or by ⟨*P* directly entails *Q*⟩. (The angled-bracket quotation marks around "ϕ" in "⟨ϕ⟩" are Quine's (1951) quasi-quotation. The notion of "direct entailment" is, roughly, the entailment of a subformula; see Atlas (1991)). In the case of the negative assertion ⟨*Not P*⟩, it was obvious to him that the Fregean senses (the truth conditions) of ⟨*Not P*⟩ and ⟨*Not P* v *Not Q*⟩ were not the same, so long as ⟨*Not Q*⟩ did not entail ⟨*Not P*⟩. That condition would be guaranteed if "'Kepler' has no reference" did not entail "Kepler did not die in misery." But what insures that this non-entailment obtains?

If the negative sentence "Kepler did not die in misery" is interpreted as an exclusion negation (van Fraassen 1971), paraphrased in English by "It is not true that Kepler died in misery," a vacuous singular term in the complement clause might be thought to yield for the statement the value TRUE (rather than no truth value at all as Frege might have thought, because "Kepler" would lack a reference). Since the exclusion negation ⟨$\neg\phi$⟩ of a statement ϕ is true in a valuation if and only if ϕ is not true, even if ϕ is not true because it is neither true nor false, ⟨$\neg\phi$⟩ will be true. But then there is an entailment of "Kepler did

not die in misery" by "'Kepler' has no reference," and Frege's argument, which supports the claim that statements and their main-verb negations that contain singular terms share the presupposition that the terms are referentially non-vacuous, fails!

Thus Frege's argument requires that the main-verb negation not be an exclusion negation, but a choice negation (van Fraassen 1971). The choice negation $\langle -\phi \rangle$ of a statement ϕ is true (false) in a valuation if and only if ϕ is false (true). If the choice negation is paraphrased in English by "Kepler didn't die in misery," but "Kepler" has no reference, one's intuition is that the choice negation is not true. So Frege's argument survives. But it survives on the assumption that the negative, ordinary-language sentence expresses a choice negation, typically a narrow-scope negation, not an exclusion negation, typically a wide-scope negation. The choice negation permits a failure of truth value for a sentence with a false (not-true) presupposition, but an exclusion negation will be true even though a presupposition is not true, as we have seen. For these reasons van Fraassen (1971) formalizes the semantical notion of presupposition using choice negation, but it commits a theorist of semantical presupposition to the lexical or scopal ambiguity of *not* in ordinary language.

Frege's argument also illustrates another aspect of presupposition. Since $\langle$Not $P\rangle$ is not equivalent to $\langle$Not P v Not $Q\rangle$, P is not equivalent to $\langle P$ and $Q\rangle$. So Q is not contained in P. The thought that "Kepler" has a reference is not contained in the affirmative assertion. If the thought is not contained in the assertion, not asserted as part of it or directly entailed by it, Frege thought that it must be presupposed.

Here we have the contrast of presupposition with both assertion and direct entailment. If one asserts *Kepler died in misery* or asserts *Kepler did not die in misery*, one does not therein assert *"Kepler" has a reference*. Similarly, if one asserts these statements, the proposition "'Kepler' has a reference" is not a subformula (or clausal constituent) of the asserted content. If "not" is understood as a choice negation, that "Kepler" has a reference will be semantically entailed by the negative sentence "Kepler did not die in misery" but not directly entailed by it, just as that "Kepler" has a reference will be semantically entailed by the affirmative sentence but not directly entailed by it. The difference between the affirmative statement entailing that "Kepler" has a reference and the negative statement not entailing that "Kepler" has a reference depends upon construing the negative statement as expressing an exclusion negation. Note that though the exclusion negation does not entail that "Kepler" has a reference, even the exclusion negation could be understood to have the referential presupposition that "Kepler" has a reference. It is just that if the name does have a reference, the exclusion negation will be equivalent to the choice negation. The point is that the exclusion negation can be true whether or not the name has a reference. Its truth value is unaffected by the obtaining of the referential presupposition. Hence it is not the case that in a use of the negative sentence understood as an exclusion negation a speaker cannot presuppose that the

name has reference. But if the presupposition fails, the exclusion negation will be true, while the choice negation will be neither true nor false.[1]

In reconstructing Frege's argument I have implicated that not only is the English sentence "It's not true that Kepler died in misery" capable of expressing the exclusion negation of "Kepler died in misery" but that it is only capable of expressing the exclusion negation. This is a traditional linguistic assumption in twentieth-century logic and philosophy, e.g. in Whitehead and Russell (1910: 6), Frege (1919: 123), and Strawson (1952: 78).[2]

Frege's argument for the preservation of referential presupposition under main-verb negation will not succeed without the assumption that main-verb negation "not" (or "nicht" in his case) is semantically a choice negation, which allows for sentences that are neither true nor false. For other reasons, which I will not discuss here, Frege also accepts a negation that is a wide-scope, exclusion negation. So Frege, and, as is well known, Russell (1905, 1919) and Whitehead and Russell (1910) assume that "not" (or "nicht") sentences are ambiguous.[3]

3 Pragmatic Presupposition

In "Pragmatics" Stalnaker (1972: 387–8) wrote:

> To presuppose a proposition in the pragmatic sense is to take its truth for granted, and to presume that others involved in the context do the same. This does not imply that the person need have any particular mental attitude toward the proposition, or that he needs assume anything about the mental attitudes of others in the context. Presuppositions are probably best viewed as complex dispositions which are manifested in linguistic behavior. One has presuppositions in virtue of the statements he makes, the questions he asks, the commands he issues. Presuppositions are propositions implicitly *supposed* before the relevant linguistic business is transacted.

Karttunen (1973, 1974) and others took Stalnaker's notion to be a sincerity condition on the utterance by a speaker of a sentence in a context. Stalnaker's notion, in contrast with Frege's notion of pragmatic presupposition (Atlas 1975), requires that the suppositions of the speaker be assumed by him to be those of his audience as well. Stalnaker's presuppositions are what the speaker takes to be common background for the participants in the context. Grice (1967, 1981), Schiffer (1972), and Lewis (1969) had employed similar notions. Stalnaker (1974: 200) uses a Gricean formulation:

> A proposition *P* is a pragmatic presupposition of a speaker in a given context just in case the speaker assumes or believes that *P*, assumes or believes that his addressee assumes or believes that *P*, and assumes or believes that his addressee recognizes that he is making these assumptions, or has these beliefs.

4 The Introduction of Accommodation in Conditionals and Factives and the Neo-Gricean Explanation of Factive Presuppositions

Karttunen (1973), seconded by Atlas (1975, 1977a), had noted a weakness in Stalnaker's account. Karttunen pointed out that a counterfactual conditional like *If Bill had a dime, he would buy you a Coke* is sincerely uttered in some contexts in which the speaker does not assume that his audience assumes that Bill does not have a dime. One point of uttering the sentence is to inform the audience that Bill does not have a dime. On Stalnaker's (1972) account the proposition that Bill does not have a dime is not a pragmatic presupposition in that context, and, on Stalnaker's general principle that "any semantic presupposition of a proposition expressed in a given context will be a pragmatic presupposition of the people in that context," the proposition is not a semantic presupposition of the counterfactual conditional. That was a conclusion that Karttunen rejected, so he rejected Stalnaker's general principle.

Likewise Atlas (1975: 37) emphasized that "the assumption of common background knowledge is too strong to be applicable to speech-situations as universally as Stalnaker and others would like." I (1975: 40) noted that "there are two strategies of the Communication Game that are especially relevant to the problem of presupposition, the strategy of Telling the Truth and the complementary strategy of Being Informative."

Factive-verb statements, e.g. ⟨Geoffrey knows that *P*⟩, are said to presuppose ⟨*P*⟩. It is clear that there is an entailment of the complement from the affirmative factive-verb statement: *Geoffrey knows that P* ⊩ *P*, and of the object-language version of the referential presupposition: *Geoffrey knows that P* ⊩ *Geoffrey exists*. From an understanding of the negative statement, we may also infer these propositions.[4] For the neo-Gricean the question was how to explain the inferences from the negative statement by appeal to Grice's (1967) model of conversation as a rational, cooperative communication of information. If we take the Kiparskys' (1970) analysis of factive sentences seriously, we have, in effect, two referential presuppositions: "Geoffrey" has a reference; ⟨the fact that *P*⟩ has a reference; or, in the object-language: "Geoffrey exists," ⟨*P*⟩. According to Grice, when a speaker means more than he literally says and expects the hearer to recognize that he does, the speaker's expectations and the hearer's interpretation are governed by Grice's (1967) Maxims of Conversation. One particularly important pair, for our purposes, are the Maxims of Quantity: (a) Make your contribution as informative as is required by the current purposes of the exchange; (b) Do not make your contribution more informative than is required. The neo-Gricean account of a factive presupposition of a "know" statement can then be sketched as follows.

Negative sentences of the form ⟨Geoffrey does not know that *P*⟩ are not scope-ambiguous but rather semantically non-specific between presuppositional

and non-presuppositional understandings (Atlas 1975: 42, n.23; Zwicky and Sadock 1975). On the semantical non-specificity view the negative sentence is not ambiguous; it is univocal, and the so-called wide-scope and narrow-scope "senses" are instead contextual specifications of the indeterminate literal meaning of the negative sentence. The literal meaning is neither the wide-scope nor the narrow-scope interpretation, but it is something to which contextual information is added to produce in the hearer a narrow-scope understanding of the speaker's utterance or a wide-scope understanding of the speaker's utterance in the context. On Frege's and Strawson's view the narrow-scope, choice negation will be true or false if $\langle P \rangle$ is true, and neither true nor false if $\langle P \rangle$ is not true. On the neo-Gricean view the truth of $\langle P \rangle$ is inferred by the hearer in order to construct a more informative understanding of the negative sentence than its indeterminate meaning. The syntax and meaning (the syntactical combination of its meaningful parts) of the sentence constrain, but do not alone specify, what a hearer understands a speaker to mean literally by an utterance of the sentence.

The specification of "not" as a choice or an exclusion negation is also made by the hearer in interpreting the speaker's utterance. The semantical indeterminacy of "not" in the sentence leaves it open to the hearer to make an inference to the best interpretation of the utterance (Atlas and Levinson 1981: 42).

The hearer's inference that "Geoffrey" has a reference is an interpretative one, in order to explain most plausibly the speaker's asserting *Geoffrey does not KNOW that P*, instead of the differently stressed utterance *GEOFFREY does not know that P – GEOFFREY doesn't exist*, and may be a real-time accommodation, taking the speaker at his word, viz. "Geoffrey," as referring to an actual individual.

I observed, like Karttunen in the case of conditionals, that speakers can make use of presuppositional sentences to Be Informative. The analysis was as follows (Atlas 1975: 42–3): If a speaker intends to be informative, in this case about Geoffrey's ignorance, the speaker must intend, and the hearer recognize, another understanding of the negative sentence (viz. one other than the non-presuppositional, exclusion negation understanding). This understanding is one in which the speaker presumes that the proposition expressed by the complement of "know" is true and hence a possible object of Geoffrey's knowledge. This presumption by the speaker is necessary whenever he intends his utterance to be informative (to the hearer about Geoffrey's ignorance). Likewise, the hearer presumes that the speaker intends to be informative, and so assumes that the speaker presumes that the complement is true. If the hearer does not know or believe, prior to the speaker's utterance, that the complement is true, his presumption, *ceteris paribus*, that the speaker's utterance is meant to be informative provides him with good reason to accept the complement as true. In this way, the speaker, by reporting Geoffrey's ignorance, can remedy the hearer's ignorance.

Thus was recognized, for conditionals (Karttunen 1973), and for factive-verb statements (Atlas 1975: 42–3), the possibility of unpresupposed

"presuppositions," which were given a theoretical explanation as part of the strategy of Being Informative in the Communication Game.

Later the notion was given the name ACCOMMODATION by Lewis (1979) in his "Scorekeeping in a Language Game," and an earlier variant of the concept than Lewis's appeared in Ballmer (1972, 1978), and in the last few sentences of Strawson's (1950) "On Referring."

Stalnaker (1974: 206) had given an account of factive-verb statements that missed the significance of **accommodation**, and one that merely demonstrated the alleged infelicity of asserting ⟨*x* knows that *P*⟩ in a context in which speaker and hearer had not mutually acknowledged the truth of ⟨*P*⟩. (See my discussion of Stalnaker 1974 below.) Thomason (1984) gave a less detailed explanation of the factive-verb presuppositions but had recognized the importance of accommodation (see Thomason 1990). Accommodation, for them, is the repair of the alleged infelicity. I, by contrast, believe that there is no infelicity in asserting negative factive statements in these contexts.

5 Grice on Presupposition, Implicature, and the Ambiguity of Negation

In this section I shall compare the neo-Gricean treatment (Atlas 1975, 1978b, 1979, Atlas and Levinson 1981) of presupposition as a heterogeneous relation combining entailment and an extended concept of Grice's Generalized Conversational Implicature with that given independently by Grice (1981) himself in his essay "Presupposition and Conversational Implicature." Atlas, Levinson, and Grice agree that *There is a king of France* is entailed by *The king of France is bald*, though Grice takes the view, unlike myself, that the negative sentence "The king of France is not bald" is structurally ambiguous between a wide-scope and a narrow-scope "not." When a speaker asserts the (allegedly) ambiguous negative sentence, then, according to Grice (1981: 189), "without waiting for disambiguation, people understand an utterance of *The king of France is not bald* as implying (in some fashion) the unique existence of a king of France. This is intelligible," Grice continues, "if on one reading (the strong one), the unique existence of a king of France is entailed, on the other (the weak one), though not entailed, it is conversationally implicated. What needs to be shown, then, is a route by which the weaker reading would come to implicate what it does not entail." That was shown in Atlas (1975, 1979) and has been discussed above. (Similar, though not identical, approaches were taken by Kempson 1975 and Wilson 1975.)

The first striking difference between Grice (1981) and Atlas (1975 etc.) is Grice's claim that the negative sentence is ambiguous and Atlas's (1974, 1975) and Kempson's (1975, 1988) contrasting claim that the unambiguous negative sentence is semantically non-specific between the "weak" and "strong" understandings, which are not readings or senses. This subtle semantic difference has often been misunderstood, and its consequences underappreciated. Grice's

(1981) account allows us to see, in a more dramatic way than usual, the consequences of this apparently small difference in theory.

What is incoherent in Grice's (1981: 189) account is the remark that hearers somehow "without waiting for disambiguation . . . understand an utterance of *The king of France is not bald* as implying (in some fashion) the unique existence of a king of France." On Grice's own (1967, 1989) original discussion of conversational implicature, sentences were taken as disambiguated, so that statements had well-defined truth conditions, before the reasoning resulting in a conversational implicatum was applied to the statement in its context. But the intent of Grice's remark above is that on either sense of the negative sentence there will be an implication "in some fashion," an entailment from the strong sense and a conversational implicatum from the weak sense. The implication of the existence of a unique king of France is overdetermined; it is a double implication, the same from each sense but on semantic grounds for the first sense and on pragmatic grounds for the second sense.

What is incoherent about Grice's position is that if hearers really do not wait for disambiguation (and Grice's justification for that claim is an utter mystery), then there is no need to generate a conversational implicatum from the (alleged) weak sense. Prior to disambiguation all that can be required for there to be any implication at all is that there be an implication from some sense of the negative sentence – not from all senses of the negative sentence. Since the strong sense will entail the existence of a unique king of France, the implication, of some fashion, can be explained without appeal to any conversational implicature at all.

Grice (1981: 189) claims that the affirmative *The king of France is bald* logically implies the existence of a unique French king, and its ambiguous negative "The king of France is not bald" has a double implication, an entailment from its strong negative sense and a conversational implicatum from its weak negative sense.

By contrast the neo-Gricean claims that the affirmative statement *The king of France is bald* logically implies the existence of a unique French king or the existence of an individual that is the speaker's reference (see Abbott, this volume), and the semantically non-specific negative sentence *The king of France is not bald* may, when asserted, be understood by an addressee in a context to "implicate" – in the Atlas (1979, 1989) technical sense (see Levinson 2000a: 256–9) – distinct propositions constructed (or inferred) from the non-propositional, semantically non-specific literal meaning of the negative sentence. The strong implicatum in a context entails the existence of a unique French king (or an intended speaker's reference); the weak implicatum in a context does not. (I do not rule out a speaker misleading an addressee, or an addressee misunderstanding a speaker, by an addressee constructing both propositions in a context, analogous to what on the ambiguity account would be the addressee recognizing both (alleged) senses of the sentence. It is an empirical fact that for asserted sentences in most contexts addressees do not consciously recognize more than one of the alternative senses or consciously recognize more than one of the inferred alternative understandings.)

It is actually interesting how the philosopher who once proposed a Modified Occam's Razor, *Senses are not to be multiplied beyond necessity* (Grice 1989: 47), lands in this commitment to ambiguity. Sluga had pointed out to him (Grice 1981: 188, n.2 – an acknowledgment omitted from Grice 1989: 271) that one could treat *the king of France* either as a quantifier or as a primitive singular term. If the former, then the sentence would be open to scope ambiguities, like typical quantified sentences. But, Grice (1981: 188) notably observes, "if there were a clear distinction in sense (in English) between, say, *The king of France is not bald* and *It is not the case that the king of France is bald* (if the former demanded the strong reading and the latter the weak one), then it would be reasonable to correlate *The king of France is bald* with the formal structure that treats the iota operator [viz. Russell's definite description operator] like a quantifier. But this does not seem to be the case; I see no such clear semantic distinction."

I want to emphasize Grice's (1981: 188) last remark, a remark that may have been in the original lecture of 1970 that Grice delivered in the University of Illinois, Champaign–Urbana, since it was also made independently by Atlas (1974) and Kuroda (1977: 105), who also saw no such clear semantic distinction. But Atlas (1974) noted, contra Grice, that there was no scope ambiguity for these negative English sentences – they were semantically non-specific with respect to scope, which further suggested that the formalization of these English sentences in a formal language whose structure imposed a scope ambiguity would miss a semantically important feature of negative English sentences.

Rather than draw that conclusion, Grice (1981: 188) used his observation to motivate his choice of the formalization of the definite description as a logically primitive singular term and concluded, "We are then committed to the structural ambiguity of the sentence *The king of France is not bald.*" As a result Grice's explanatory task was to show how, from an ambiguous negative sentence, Strawson's presupposition that there exists a unique French king (at the time of utterance) can be explained.

6 Grice's Reduction of Referential Presupposition to Implicature: the Evidence of Cancelability

Grice (1981: 187) had already correctly observed that "in the original version of Strawson's truth-gap theory, he did not recognize any particular asymmetry as regards the presupposition that there is a king of France, between the two sentences, 'The king of France is bald' and 'The king of France is not bald'; but it does seem to be plausible to suppose that there is such an asymmetry."

Grice then continues:

> I would have thought that the implication that there is a king of France is clearly part of the conventional force of *The king of France is bald*; but that this is not

> clearly so in the case of *The king of France is not bald*. . . . An implication that there is a king of France is often carried by saying [*The king of France is not bald*], but it is tempting to suggest that this implication is not, inescapably, part of the conventional force of the utterance of ["The king of France is not bald"], but is rather a matter of conversational implicature.

Then, as did Atlas (1975, 1979), Boër and Lycan (1976), Atlas and Levinson (1981), among others, Grice argued that the so-called presupposition of the negative statement is (a) *cancelable*, (b) *non-detachable*, and (c) *calculable*, i.e. *justifiable by argument*, from Grice's Maxims of Conversation as a conversational implicatum (see Horn, this volume). (Roughly, this means that (a) one can assert the statement and deny the "presupposition" without inconsistency; that (b) other statements synonymous with this statement, but not differing wildly in manner, will carry the same "presupposition"; and that (c) the inference to the existence of a unique king of France is justifiable by principles governing rational, information exchange in conversation.) Grice argued that the proposition that there is a unique king of France is both explicitly cancelable (by outright denial) and contextually cancelable (by inconsistency with background information).

Grice offered the following support for those pragmatic features of the "presupposed" proposition. He (1981: 187) wrote: "if I come on a group of people arguing about whether the king of France is bald, it is not linguistically improper for me to say that the king of France is not bald, since there is no king of France." As I have mentioned earlier, speakers rarely notice the ambiguity of their utterances, and Grice is a case in point. He did not notice the ambiguity of his wording and placement of the comma in his indirect discourse sentence; he should have written in direct discourse: . . . for me to say *The king of France is not bald, since there is no king of France*. He also argued that the proposition was contextually cancelable. He (1981: 187) described an example as follows:

> It is a matter of dispute whether the government has a very undercover person who interrogates those whose loyalty is suspect and who, if he existed, could be legitimately referred to as the loyalty examiner; and if, further, I am known to be very sceptical about the existence of such a person, I could perfectly well say to a plainly loyal person, *Well, the loyalty examiner will not be summoning you at any rate*, without, I would think, being taken to imply that such a person exists.

But the more compelling example is the one he then goes on to give:

> Further, if I am well known to disbelieve in the existence of such a person, though others are inclined to believe in him, when I find a man who is apprised of my position, but who is worried in case he is summoned, I could try to reassure him by saying, *The loyalty examiner won't summon you, don't worry*. Then it would be clear that I said this because I was sure there is no such person.

Notice, as Atlas (1974) observed, clarity does not require Grice to have said *It's not the case that the loyalty examiner will summon you, don't worry*.

7 Non-detachability of Implicatures, Meaning, and the neo-Gricean Mechanism of Inference: Pragmatic Intrusion

The issue of non-detachability is more subtle. Here one looks for roughly synonymous ways of making an assertion in which differences of Manner are not so pronounced as to swamp the similarities of meaning. Levinson (2000a: 111) writes, "Most analysts hold that presupposition cannot be reduced to matters of implicature and that presuppositions are attached to their lexical or syntactic triggers (and are thus not detachable in Grice's sense . . .)," as if non-detachability were a problem for the neo-Gricean reduction. To the contrary, one expects generalized conversational implicata to be non-detachable. Syntactic triggers, like the syntactic structure of clefts, are accounted for on the neo-Gricean view if, as Atlas and Levinson (1981) show, the logical form of clefts, from which the implicata are generated, is distinct from that of the related simple declaratives, whose syntax does not trigger a "presupposition." As for lexical triggers, *knows that P* and *believes justifiably and non-accidentally the fact that P* will trigger the same "presupposition" ⟨*that P*⟩. Grice's (1981) and my arguments are designed to show that the neo-Gricean account "saves the phenomena" of presupposition.

For example, as suggested in Atlas (1974, 1975, 1977b), *The king of France is not bald* and *It's not the case that the king of France is bald* can have the same presupposition that there is a king of France, contrary to the tradition in philosophical logic that assumed the latter statement to express only the wide-scope or exclusion negation interpretation (e.g. Whitehead and Russell 1910: 6, Frege 1919: 123, Strawson 1952: 78). Grice (1981: 188) agrees with this linguistic judgment. But Grice holds that these sentences are semantically ambiguous and that the narrow-scope sense entails the existence of a king of France, while the wide-scope sense, when asserted, carries a generalized conversational implicature by the speaker that a king of France exists. Kempson (1975, 1988) and Atlas (1974, 1975, 1978a, 1978b, 1979) hold that these sentences are not ambiguous but univocal, semantically non-specific between the narrow-scope and wide-scope understandings. Thus the inferential mechanism of conversational implicature will map semantically non-specific, non-propositional semantic representations into narrow-scope or into wide-scope propositions depending on the context, as discussed in Atlas (1978a, 1979). As discussed in Atlas and Levinson (1981: 40–3), those singular terms in the statement that are Topic NPs are "non-controversially," by default, given status in the interpretations as referring terms.

The neo-Gricean account is non-Gricean, since the classical Gricean view took the semantic representation of sentence-types to be literal meanings incomplete only in contextual specification of the reference of singular terms, demonstratives, indexicals, tense, etc. and took the semantic representations of sentence-tokens (utterances) to be completed propositions, the

content of "what is said." Thus I was committed to what later was labeled by Levinson (1988, 2000a) PRAGMATIC INTRUSION, the intrusion of pragmatically inferred content into the truth conditions of what Grice (1989) called "what is said."[5]

8 The Reduction of Presuppositions to Conversational Implicata: Accommodation, Calculability, and Common Ground

Grice (1981: 185) briefly characterizes the speaker's implicatum as the content that "would be what he might expect the hearer to suppose him to think in order to preserve the idea that the [conversational] maxims are, after all, not being violated." The neo-Gricean explanation (Atlas 1975, Atlas and Levinson 1981) of referential, factive, and cleft presuppositions depended on the hearer supposing the speaker not to be violating Atlas and Levinson's (1981: 40) Neo-Gricean Maxims of Relativity, which were refinements of Grice's Maxims of Quantity.

(4) **Maxims of Relativity**
1. Do not say what you believe to be highly noncontroversial, that is, to be **entailed** by the presumptions of the common ground.
2. Take what you hear to be lowly noncontroversial, that is, **consistent with** the presumptions of the common ground.

The first maxim is a speaker-oriented production maxim; the second maxim is a hearer-oriented comprehension maxim. It is important that the production maxim is a prohibition, a "do not" maxim, and that the comprehension maxim is an obligation, a "must do" maxim. It is also important to note the difference between a sentence being **entailed** by a set of sentences in the common ground and a sentence being merely logically **consistent** with a set of sentences in the common ground. The consistency requirement was designed to permit the kind of informative statement **accommodation** for referential and factive presuppositions that I described in Atlas (1975, 1977a). If a singular term were introduced by its use in a statement that would be more informative under an interpretation requiring the singular term to be a referring term in that statement, and its having a reference was **consistent** with the previously established common ground, nothing in my maxim would stand in the way of such an informative interpretation, whether or not the existence of the reference of the singular term had already been established as part of the common ground. Atlas and Levinson's (1981) Maxims of Relativity were designed to accommodate accommodation.

It should also be noted that our Maxims of Relativity were couched in terms of **non-controversiality** and of **common ground**, constrained by a mini-theory of Non-controversiality. Among the axioms of that mini-theory were (Atlas and Levinson 1981: 40):

(5) **Axioms of Non-controversiality**
  a. If A(*t*) is "about" *t*, i.e. if ⟨*t*⟩ is a Topic NP in the statement A(*t*), then if ⟨*t*⟩ is a singular term, the proposition ⟨*t* exists⟩ is non-controversial.
  b. The obtaining of stereotypical relations among individuals is noncontroversial.

Embedded in our neo-Gricean account of referential and cleft "presuppositions" were the distinct notions **Topic NP, non-controversial proposition, common ground,** and **most informative interpretation of a statement,** the interpretation of which is consistent with the propositions of the common ground.

What I showed in Atlas (1975) and Atlas and Levinson (1981) and have reviewed above was the reasoning by which the conversational implicatum *There is a king of France* could be reached from the **default** understanding of an assertion of *The king of France is not bald* (see (5a) above). The construction of reasoning to a default interpretation is required if Grice's third criterion for the existence of a conversational implicature is to be met, and the reasoning I constructed depended upon an elaboration and a revision of Grice's Maxims of Quantity (being as informative as is required).

Grice (1981: 189) himself adopts a Russellian analysis of *The king of France is bald*, a conjunction of three independent clauses (cf. Strawson 1950: 5):

(6) *The king of France is bald.*
  (A) *There is at least one king of France.*
  (B) *There is not more than one king of France.*
  (C) *There is nothing which is a king of France and is not bald.*

The account of presupposition that Grice (1981: 190) gave of the presupposition of the negative statement *The king of France is not bald* depends upon a distinction between denied and undenied conjuncts:

> it would be reasonable to suppose that the speaker thinks, and expects his hearer to think, that some subconjunction of A and B and C has what I might call common-ground status and, therefore, is not something that is likely to be challenged. One way in which this might happen would be if the speaker were to think or assume that it is common knowledge, and that people would regard it as common knowledge, that there is one and only one [king of France].

Thus the speaker who asserts *The king of France is not bald* would be understood to deny only the third conjunct (C) {*Nothing that is a king of France is not bald, Whatever is a king of France is bald*}, since the argument just quoted was supposed to "show that, in some way, one particular conjunct is singled out" (Grice 1981: 190). Of course, if one takes it as common knowledge that there is a unique king of France, and then denies conjunct (C), as Grice proposes, one gets the conjunction (i) *There is a unique king of France and there is at least one king of France that is not bald*, which is supposed to be an interpretation of

(ii) *The king of France is not bald.* The (weak) denial, viz. the interpretation of *It's not the case that the king of France is bald* as ⟨¬ ((A and B) and C)⟩, conjoined with the common ground ⟨(A and B)⟩, is supposed to give ⟨((A and B) and ¬C)⟩ as the interpretation of *The king of France is not bald.* But the question is, WHY should the common ground intervene in utterance interpretation in this way? Grice believes that its commongroundedness is a sufficient and obvious explanation; I do not. A theory of how and why common ground enters into utterance interpretation is needed. Grice does not offer one; Atlas and Levinson (1981) do.

Sentence (i) entails *There is a unique king of France,* and an utterance of (ii), on Grice's (1981: 189) own showing, "without waiting for disambiguation," implies "(in some fashion) the unique existence of a king of France." Grice (1981: 189) has already remarked that "what needs to be shown is a route by which the weaker reading could come to implicate what it does not entail." But what Grice (1981: 190) has just shown is how the (weak) **denial** of *The king of France is bald,* in conjunction with the common ground, **entails** *There is a unique king of France,* which is what he has explicitly claimed a speaker **implicates** by the (weak) denial of *The king of France is bald* and that the (weak) denial does not entail without the common ground.

Does this mean that Grice reduces implicature to a context-relative entailment? If he were to do so, he would start to sound like a Sperber and Wilson (1986a) RELEVANCE theorist. But a common-ground-dependent entailment from the (weak) denial is merely a fact about context and the assertoric content of a weak negation. It is not a theory of an inference to the best interpretation of the negative utterance in the fashion of Atlas and Levinson (1981). Unlike me, Grice thinks the negative *sentence* already has an interpretation; it is the weak negation. (Levinson was classically Gricean about it in Atlas and Levinson (1981), though he (2000a) now takes a more favorable view of semantical non-specificity; see Atlas and Levinson 1981: 55, n.19). The question for Grice is, why should that interpretation generate the "implication" that there is a unique king of France? *Pace* Grice (1981: 190), the answer cannot be that the existential proposition is ALREADY ASSUMED in the context. The existence of a context-relative entailment is no explanation of "the route by which the weaker reading could come to implicate what it does not entail," since context-relative entailment does not possess the logical properties of implicature or presupposition. Even though the context provides premises, the relation is an entailment; it is monotonic, unlike implicature (which is non-monotonic, i.e. defeasible), and it is unlike presupposition (which is preserved under main-verb negation). Unlike an entailment an implicatum can also be cancelled (i.e. negated without a resulting contradiction).

The sources of these difficulties in Grice's (1981) analysis of *The king of France is not bald* are clear. The first source is his accepting the conjunction of three independent propositions as an analysis of *The king of France is bald* (for reasons that I have not discussed here) and his concomitant commitment to the scope ambiguity of *The king of France is not bald.* The ambiguity assumption

leads Grice into an incoherent account in his attempt to derive the referential "presupposition" from his (weak) external negation reading of the negative sentence. It is here that ignoring the subtle difference between ambiguity and semantically non-specific univocality has devastating consequences for the success of Grice's (1981) attempt to reduce referential presupposition to implicature. And it is here that the Atlas's (1974, 1975, 1979) and Atlas and Levinson's (1981) analyses succeed where Grice's (1981) fails.

The second source is his appeal to **common ground** in the simple way he appeals to it, and the way that Stalnaker (1974) appeals to it in "Pragmatic Presuppositions." An explanation using speaker's presupposition is not equivalent to an account using conversational implicatures.

9 Common Ground and Context as the Source of Presuppositions: Stalnaker's "Pragmatic Presuppositions," the Problem of Accommodation, and the Concept of Non-controversiality

Grice's error was the tacit assumption that by putting *There is a unique king of France* into the common ground, its commongroundedness would explain its presuppositional – as contrasted with "assertoric" and with "entailed" – status in the interpretation of a speaker's assertion. But commongroundedness of a proposition can provide no such contrast with the assertoric status or entailments of a proposition. It matters not whether *There is a unique king of France* belongs to the speaker's and addressee's "common knowledge" if what needs to be explained is why and how Grice's weak reading of *The king of France is not bald,* if asserted, yields as an implicatum *There is a unique king of France.* Grice's attempted explanation by appeal to common knowledge of "There is a unique king of France" still results on his account in an entailment of "There is a unique king of France" from the common ground and the weak reading of *The king of France is not bald,* because it is entailed by the common ground alone.

What is missing is an account of why using the common-ground status of "There is a unique king of France" when combined with the weak negation interpretation of "The king of France is not bald" explains an inference to the presuppositional interpretation of the utterance *The king of France is not bald,* an inference to the token of the type *The king of France* having a reference, where the token's having a reference is neither entailed by the literal meaning of the utterance (on either my view or Grice's view of the literal meaning of the negative sentence) nor asserted in it.

If one needed more proof that "common knowledge" is not essential to explaining why people understand an utterance of *The king of France is not bald* to "imply (in some fashion)" the existence of a unique king of France, it is the

existence of accommodation. And Grice (1981: 190), despite his own (misguided) attempt to explain presupposition as an implicatum somehow arising from common ground, understood what became known later as accommodation:

> it is quite natural to say to somebody, when we are discussing some concert, *My aunt's cousin went to that concert,* when one knows perfectly well that the person one is talking to is very likely not even to know that one had an aunt, let alone know that one's aunt had a cousin. So the supposition must be not that it is common knowledge but rather that it is noncontroversial, in the sense that it is something that you would expect the hearer to take from you (if he does not already know).

That is why the account in Atlas and Levinson (1981: 40–1) appealed to **non-controversiality** in stating the Maxims of Relativity, and why the referential "presuppositions" are expressed as Conventions of Extension, a subclass of Conventions of Non-Controversiality:

(7) If A(*t*) is "about" *t*, i.e. ⟨*t*⟩ is a Topic NP in a statement A(*t*), then:
   a. if ⟨*t*⟩ is a singular term, ⟨*t* exists⟩ is non-controversial;
   b. if ⟨*t*⟩ denotes a state of affairs or a proposition, ⟨*t* is actual⟩ and ⟨*t* is true⟩ are non-controversial.

and why a Convention of Intension among the Conventions of Non-Controversiality is the following:

(8) The obtaining of stereotypical relations among individuals is non-controversial.

If others were not as clear about the notion of non-controversiality as Grice was, others were clear about accommodation. In fact, as Larry Horn has reminded me, the Father of Accommodation is P. F. Strawson (1950: 27). In the last few sentences of "On Referring," Strawson writes:

> A literal-minded and childless man asked whether all his children are asleep will certainly not answer "Yes" on the ground that he has none; but nor will he answer "No" on this ground. Since he has no children, the question does not arise. To say this is not to say that I may not use the sentence, "All my children are asleep", with the intention of letting someone know that I have children, or of deceiving him into thinking that I have. Nor is it any weakening of my thesis to concede that singular phrases of the form "the so-and-so" may sometimes be used with a similar purpose. Neither Aristotelian nor Russellian rules give the exact logic of any expression of ordinary language; for ordinary language has no exact logic.

Lewis (1979) acknowledges Stalnaker's discussion of the phenomena of accommodation, and Stalnaker (1974: 202) is quite explicit:

> a speaker may act as if certain propositions are part of the common background when he knows that they are not. He may want to communicate a proposition indirectly, and do this by presupposing it in such a way that the auditor will be able to infer that it is presupposed. In such a case, a speaker tells his auditor something in part by pretending that his auditor already knows it.
>
> When a conversation involves this kind of pretense, the speaker's presuppositions, in the sense of the term I shall use, will not fit the definition sketched above. That is why the definition is only an approximation. I shall say that one actually does make the presuppositions that one seems to make even when one is only pretending to have the beliefs that one normally has when one makes presuppositions.

I shall return to the peculiarity of Stalnaker's account in the second paragraph of the quotation above. I merely want to note here the evident utility of the phenomena of accommodation in understanding a presupposition of an assertion, and distinguish the linguistic phenomena from Stalnaker's analysis of them as a pretended "speaker's presupposition." (In Stalnaker's (1974: 200) definition of a speaker's pragmatic presupposition in a context, "A proposition *P* is a pragmatic presupposition of a speaker in a given context just in case the speaker assumes or believes that *P*, assumes or believes that his addressee assumes or believes that *P*, and assumes or believes that his addressee recognizes that he is making these assumptions, or has these beliefs.")

The notion that is required to explain presupposition is not the common knowledge that is appealed to in Stalnaker's (1974: 200) definition of a speaker's pragmatic presupposition in a context. Common-ground status of a proposition for a speaker and addressee will in a speech-context be sufficient for a proposition to be non-controversial in that context, but common-ground status is not necessary for it to be non-controversial. The trouble with Stalnaker's analysis of accommodation is that accommodation supposedly occurs against a background of common knowledge in which, for example, the existence of Grice's aunt's cousin is established and in which an individual is identifiable as the reference of "my aunt's cousin." The point is that for purposes of a theoretical explanation of interpretations of assertions that carry presuppositions, common knowledge does not matter. The theoretically important notion, as Grice (1981) and Atlas and Levinson (1981) recognized, is non-controversiality.

The speaker's implicata that constitute the "presuppositions" of assertions can reinforce propositions already in the common ground of a conversation, or they can introduce propositions into the common ground, or they can be recognized and then dismissed, never even entering the common ground of a conversation, because they belong to a separate store of information that we characterize as non-controversial. This store of non-controversial information is accessible for use in a conversation; it need not be explicitly a part of the common ground, or part of mutual knowledge, for purposes of a particular conversation. But what is non-controversial on the occasion of an utterance need not have been stored at all. A speaker's expectation that an addressee will

charitably take the speaker's word that a singular term ⟨*t*⟩ is non-vacuous is not the same as a speaker and addressee's expectations that they have in common the thought ⟨*t* exists⟩. What they linguistically have in common is not a background belief; it is a language-based practice or convention of interpretation that allows certain bits of language, e.g. singular terms, charitably to have a taken-for-granted semantic evaluation in the course of making and understanding assertions, but only if the singular terms are Topic Noun Phrases (see Davidson 1967, Grandy 1973, Atlas 1988, 1989).

Stalnaker (1974: 202), reflecting on accommodation, remarks that "Presupposing is thus not a mental attitude like believing, but is rather a linguistic disposition – a disposition to behave in one's use of language as if one had certain beliefs, or were making certain assumptions." This is certainly closer to the truth than his notion of a speaker's pragmatic presupposition; it is his notion of a speaker's pretended pragmatic presupposition.

Is Grice (1981: 190) pretending to believe that his aunt has a cousin? Is he pretending, like Stalnaker, to believe that his addressee believes that Grice's aunt has a cousin? Is he pretending to believe that his addressee recognizes that he is pretending to believe that his aunt has a cousin? And what does any of this have to do with Grice's taking it for granted that his addressee will take it for granted that Grice's aunt has a cousin when Grice asserts *My aunt's cousin went to that concert*?

But, then, I am not saying anything that Stalnaker and Sadock have not already recognized. Stalnaker (1974: 202–3, n.3) reports a counterexample of Sadock's:

(9) I am asked by someone whom I just met, "Are you going to lunch?" I reply, "No, I've got to pick up my sister."

Stalnaker admits that the I of the example "seems to *presuppose* that [he] has a sister even though [he] does not assume that the [first] speaker knows this. Yet the statement is clearly acceptable . . . ," which it would not be if Stalnaker's view were correct that, absent the mutual beliefs or assumptions, an assertion relying on them would be infelicitous. Stalnaker continues: "and it does not seem right to explain this in terms of pretense. . . ."

Indeed. The situation for Stalnaker's (1974) account of pragmatic presupposition is now this: first, "mutual knowledge" was seen to fail to account for accommodation; so, second, mutual knowledge was changed to pretended mutual knowledge; finally, pretended mutual knowledge was seen to fail to account for accommodation. What now?

Stalnaker (1974: 203, n.3) has two replies, in the first of which he appeals to a notion of Gricean implicature, the very notion that in his essay "Pragmatic Presuppositions" Stalnaker (1974: 212) proposes for explanatory purposes to replace by his notion of a speaker's presupposition in a context (see below)! Unfortunately this cannot rescue Stalnaker, since he glosses Grice's notion of implicature in terms of the notion of common background knowledge: "the addressee infers that the speaker accepts that *Q* from the fact that he says that

P because normally one says that *P* only when it is common background knowledge that *Q*," thus missing his own point about accommodation.

Stalnaker's second reply to Sadock's example is to consider the option of denying that there is a presupposition at all in the example, to claim that the example is an exception to the usual cases of referential presupposition, but Stalnaker refuses to undertake this strategy of dealing with Sadock's example, on the grounds of the complexity of accounting for both cases in which a speaker does presuppose the existence of a unique reference of a singular term and cases in which he does not; he fears the consequent loss of the simplicity of the generalization that "a speaker **always** presupposes the existence of a unique referent." (A falsehood is no loss. The falsity of Stalnaker's (1974) simple generalization follows from the Strawson–Grice Condition that a statement ⟨A(*t*)⟩ presupposes ⟨*t* exists⟩ only if ⟨*t*⟩ is a Topic NP in ⟨A(*t*)⟩. See Strawson 1971: 92–5, Atlas 1988, 1989.)

10 The Context/Content Distinction

Stalnaker (1974: 212) describes his program in "Pragmatic Presuppositions" as follows:

> The contrast between semantic and pragmatic claims can be either of two things, depending on which notion of semantics one has in mind. First, it can be a contrast between claims about the particular conventional meaning of some word or phrase on the one hand, and claims about the general structure or strategy of conversation on the other. Grice's distinction between conventional implicatures and conversational implicatures is an instance of this contrast. Second, it can be a contrast between claims about the truth-conditions or *content* of what is said – the proposition expressed – on the one hand, and claims about the *context* in which a statement is made – the attitudes and interests of speaker and audience – on the other. It is the second contrast that I am using when I argue for a pragmatic rather than a semantic account of presupposition.

Atlas and Levinson's (1981) and Grice's (1981) claim is that no adequate theory of presupposition can maintain the contrast that Stalnaker proposes. PRAGMATIC INTRUSION (Levinson 2000a) and SEMANTICAL NON-SPECIFICITY (Atlas 1989), which I have discussed above, show that **the content/context distinction is just one more philosophical myth – another untenable dualism, like the figurative/literal distinction** (Atlas in press) **and the *a priori/a posteriori* distinction** (Putnam 1976).

As Sadock's example shows, Stalnaker's theory of context manifestly fails to save the presuppositional phenomena, and his only hope of responding to the counterexamples is the Gricean theory of conversational implicature that he wants his theory of context to supplant.

But there is an even simpler objection to Stalnaker's account of presupposition as a speaker's pragmatic presupposition. Consider the case of simple

conditionals ⟨*If P then Q*⟩. Stalnaker's (1974: 211) account of conditionals is given briefly:

> we need first the assumption that what is explicitly *supposed* becomes (temporarily) a part of the background of common assumptions in subsequent conversation, and second that an *if* clause is an explicit supposition.

So, *If the king of France is a serial killer, his mother will be ashamed of him* now requires for its felicitous assertion that the speaker assume (temporarily) that there is a king of France, assume that his addressee assumes that there is a king of France, and assume that his addressee recognizes that the speaker is making these assumptions, and that the speaker assume (temporarily) that the king of France is a serial killer, assume that his addressee assumes that the king of France is a serial killer, and assume that his addressee recognizes that the speaker is making these assumptions. Note that the condition imposed by Stalnaker is not that one "entertains the thought," or "considers the consequences of," but rather that one is assuming as background . . . But are you? . . . assuming, I mean. I am not assuming, even temporarily, that there is a king of France when I reflect on the conditional *If the king of France is a serial killer, his mother will be ashamed of him*. And I am not assuming, even temporarily, that the king of France is a serial killer. I know that there is no king of France; why should I be assuming that he's a serial killer? Do I pretend to assume these things? No, I don't do that either. In fact in no pre-theoretical sense of "assumption" is the content of an *if*-clause being assumed. So what does Stalnaker mean by "assumption"?

Might Stalnaker mean by "assuming" "taking it for granted"? I might take it for granted that there was a king of France if a speaker asserted the conditional, not myself knowing whether there was, but do I take it for granted that the king of France is a serial killer if a speaker asserts the conditional *If the king of France is a serial killer . . .*? No, I don't, precisely because *the king of France is a serial killer* occurs in an *if* clause. I don't take the contents of *if* clauses for granted. So, on Stalnaker's theory of contexts, I cannot felicitously or appropriately assert *If the king of France is a serial killer, his mother will be ashamed of him*. Yet, surely, I can felicitously assert this conditional.

What is worse, Stalnaker's position is inconsistent with his own view of conditionals. Consider for the moment that asserting ⟨*If P then Q*⟩ has the feature of requiring the common background assumptions that Stalnaker claims: the speaker temporarily assumes *P*, etc. Hence, according to Stalnaker, the speaker pragmatically presupposes *P*. But Stalnaker (1974: 208) writes, "if a speaker explicitly supposes something, he thereby indicates that he is not *pre*-supposing it, or taking it for granted. So when the speaker says 'if I realize later that *P*,' he indicates that he is not presupposing that he will realize later that *P*." So Stalnaker's (1974) account of the context of conditionals commits him to a speaker both presupposing and not presupposing the content of the *if* clause.

The fundamental problem with Stalnaker's analysis of the assertion of a conditional is that what motivates the analysis is the interesting but ultimately unsatisfactory view that an assertion of a conditional sentence is an assertion of the consequent ⟨B⟩ on the condition that ⟨A⟩ is true: ⟨$\vdash$ (A $\rightarrow$ B)⟩ is analyzed as ⟨A $\vdash$ B⟩. If ⟨A⟩ is false, then there is no assertion. This is an obvious analogue of Strawson's view that when a presupposition is false, there is no true-or-false statement made. (Not surprisingly perhaps, it is the speech-act analogue to Stalnaker's (1968) account of the semantics of conditionals.)

None of the attitudes of the speaker and addressee that Stalnaker has considered – believing, assuming, taking for granted – correctly characterizes the linguistic behavior or associated psychological states of speakers of a language, their attitudes toward what they say or hear. Stalnaker believed that in order to explain the presuppositions of assertions one should use the concept of "speaker's pretended presuppositions" to give a theory of linguistic contexts in which assertions are made. I believe, with Grice, that in order to explain the presuppositions of assertions, one should use the concept of "speaker's conversational implicata of an assertion." Stalnaker (1974: 202–3, n.3) never answered Sadock's counterexample to his theory of contexts.

11 Conclusion

It is peculiar that some of those who first noted the phenomena of accommodation have largely misunderstood their implications. The phenomena of accommodation show that the word "presupposition" misnames the linguistic facts. Referential *pre*suppositions are a special case of accommodations; accommodations are not a special case of presuppositions. What we want a logical and linguistic theory of is accommodation, not presupposition. Accommodations are linguistically primary; presuppositions are secondary – they are special cases in which ⟨*t* exists⟩ is not merely accommodated as non-controversial for purposes of interpreting an assertion but also in which ⟨*t* exists⟩ already belongs to the common ground. (The Newtonian motions that are primary and paradigmatic are those at constant speed in a straight line – at constant velocity – not those that require the application of a net force. Sadock's objection is to Stalnaker's account of presupposition as Galileo's objections are to Aristotle's account of motion.) A neo-Gricean theory of conversational implicature is a theory of one type of speaker's meaning; it is a theory of accommodation, or more broadly, as Levinson (2000a) has recently put it, of presumptive meanings. Non-controversiality, taking the speaker at his word, not commongroundedness, is the notion for understanding how the paradigm cases of assertions with "presuppositions" are interpreted by addressees.

According to the neo-Gricean account, the resources for an explanatory pragmatic theory of "presuppositional" inference consist in these elements: (a) the semantical non-specificity of *not*, non-specific between choice and exclusion negation understandings (see Atlas 1974, 1975, 1977b, Kempson 1975, 1988);

(b) a neo-Gricean mechanism for utterance-interpretation of semantically non-specific negative sentences (see Atlas 1979); (c) Atlas and Levinson's (1981) principles of non-controversial, default interpretations of statements containing singular terms that are Topic NPs; (d) a defensible Topic/Comment distinction for statements; (e) the Grice–Strawson Condition that permits a presuppositional inference to the referentiality of a singular term in a statement only if the term is a Topic NP (see Strawson 1964b: 92–5, Atlas 1988, 1989); and (f) (what I have not discussed here) the abandonment of theoretical preconceptions of the data that motivated the Projection Problem for Presupposition and presupposition cancellation by "metalinguistic" negation. (I have argued elsewhere (Atlas 1983, Atlas 2001) that so-called "presupposition canceling" data, e.g. *The king of France isn't bald – there is no king of France*, are not linguistically deviant or logically contradictory – as a matter of fact, they are consistent and linguistically normal and obviate the need for the "pragmatic ambiguity" of *not*.)

In this chapter I have argued for a shift in paradigm:

1. Accommodation is not a peripheral phenomenon of presupposition – it is the central phenomenon of presupposition.
2. Non-controversiality, not common knowledge, is the core notion that best describes the linguistic data of presuppositional assertions.
3. Pragmatic Intrusion (Levinson 1988, 2000) and Semantical Non-Specificity (Atlas 1974, 1975, etc.) show that the content/context distinction is a philosophical myth. It can do no philosophical work in the explanation of our linguistic knowledge of the presuppositions of assertions.[6]

This paper is dedicated to the memory of John Robert Purvis and to the memory of Karen Kossuth.

NOTES

1. So exclusion negation is not a presupposition "plug" in Karttunen's (1973) sense.
2. The assumption is, I have argued, false (see Atlas 1974, 1975, 1977b, 1978b, 1989; K. Bach 1987a; Kempson 1988; Horn 1989).
3. This assumption too, I have argued, is false. The free morpheme "not" does not create ambiguities in English. It is semantically non-specific with respect to scope or with respect to the logical difference between exclusion and choice negation (see Zwicky and Sadock 1975; Atlas 1974, 1975, 1977b, 1978b, 1979, 1989; Kempson 1988, Horn 1989).

   Happily the semantical non-specificity (generality) of "not" will not undermine Frege's argument, since he couched the argument in terms of **assertions** rather than **sentences**. A semantically negative **sentence** can be used to make a specific, choice negation **assertion**. Just so long as one treats **assertions** –

tokens of utterance-types in which a possible specification of a semantically non-specific sentence is achieved by the use of **collateral information** available to speakers and addressees (mutual "knowledge") in a **context** of utterance – as the carriers of presuppositions, Frege's argument for the preservation of referential presuppositions under main-verb negation in sentences of the form *Proper Name + Verb Phrase* will be sustained.

4 The proper explanation of the inference may appeal to entailment in some choice negation cases, e.g. *Geoffrey doesn't regret that P* $\Vdash$ *P*, but not in others; e.g. Horn (p.c. 2002) claims that entailment fails in the following case: *Geoffrey doesn't know for a fact that he can trust you* $\nVdash$ *Geoffrey can trust you.* I can hear Horn's example in both entailment and non-entailment ways. But the first-person, "quasi-performative" (Hunter 1990, Atlas 1995) version seems to me clearly a non-entailment: *I don't know for a fact that I can trust you* $\nVdash$ *I can trust you.* So I shall distinguish the first-person, "know for a fact" sentences from the third-person "know that . . ." sentences.

5 The view of Atlas (1978a, 1979) bears a strong family resemblance, noted by Horn (1989: 433; 1992), to the views developed by the "London School," in their notions of "explicature" in Relevance Theory, and Kent Bach's notion of "impliciture"; see Kempson (1986, 1988), Sperber and Wilson (1986a), Carston (1988), Blakemore (1992), Recanati (1989, 1993), K. Bach (1994a), and papers in this volume by Bach, Carston, Horn, Recanati, and Wilson and Sperber. For early discusssions of Pragmatic Intrusion, see Katz (1972: 444–50) and Walker (1975).

6 I am indebted for comments on earlier drafts of this essay to Kent Bach, Laurence Goldstein, Larry Horn, Peter Ross, and Charles Young. They did the best they could to keep me from error.

3 Speech Acts

JERROLD SADOCK

When we speak we can do all sorts of things, from aspirating a consonant, to constructing a relative clause, to insulting a guest, to starting a war. These are all, pre-theoretically, speech acts – acts done in the process of speaking. The theory of speech acts, however, is especially concerned with those acts that are not completely covered under one or more of the major divisions of grammar – phonetics, phonology, morphology, syntax, semantics – or under some general theory of actions.

Even in cases in which a particular speech act is not completely described in grammar, formal features of the utterance used in carrying out the act might be quite directly tied to its accomplishment, as when we request something by uttering an imperative sentence or greet someone by saying "Hi!" Thus, there is clearly a conventional aspect to the study of speech acts. Sometimes, however, the achievement cannot be so directly tied to convention, as when we thank a guest by saying, "Oh, I love chocolates." There is no convention of English to the effect that stating that one loves chocolates counts as an act of thanking. In this case, the speaker's INTENTION in making the utterance and a recognition by the addressee of that intention under the conditions of utterance clearly plays an important role. Note that whether convention or intention seems paramount, success is not guaranteed. The person to whom the conventionalized greeting "Hi!" is addressed might not speak English, but some other language in which the uttered syllable means "Go away!," or the guest may not have brought chocolates at all, but candied fruit, in which cases these attempts to extend a greeting and give a compliment are likely to fail. On the other hand, failure, even in the face of contextual adversity, is also not guaranteed. Thus, one may succeed in greeting a foreigner who understands nothing of what is being said by making it clear through gesture and tone of voice that that is the intent. Much of speech act theory is therefore devoted to striking the proper balance between convention and intention.

Real-life acts of speech usually involve interpersonal relations of some kind: A speaker does something with respect to an audience by saying certain words

to that audience. Thus it would seem that ethnographic studies of such relationships and the study of discourse should be central to speech act theory, but in fact, they are not. Such studies have been carried out rather independently of the concerns of those philosophers and linguists who have devoted their attention to speech acts. This is perhaps not a good thing, as Croft (1994) has argued, but since it is the case, anthropological and discourse-based approaches to speech acts will not be covered in this handbook entry.

1 Austin

The modern study of speech acts begins with Austin's (1962) engaging monograph *How to Do Things with Words*, the published version of his William James Lectures delivered at Harvard in 1955. This widely cited work starts with the observation that certain sorts of sentences, e.g., *I christen this ship the Joseph Stalin; I now pronounce you man and wife*, and the like, seem designed to **do** something, here to christen and wed, respectively, rather than merely to **say** something. Such sentences Austin dubbed PERFORMATIVES, in contrast to what he called CONSTATIVES, the descriptive sentences that until Austin were the principal concern of philosophers of language – sentences that seem, pretheoretically, at least, to be employed mainly for saying something rather than doing something.

While the distinction between performatives and constatives is often invoked in work on the law, in literary criticism, in political analysis, and in other areas, it is a distinction that Austin argued was **not** ultimately defensible. The point of Austin's lectures was, in fact, that every normal utterance has **both** a descriptive and an effective aspect: that saying something is also doing something.

1.1 Locutions, illocutions, and perlocutions

In place of the initial distinction between constatives and performatives, Austin substituted a three-way contrast among the kinds of acts that are performed when language is put to use, namely the distinction between locutionary, illocutionary, and perlocutionary acts, all of which are characteristic of most utterances, including standard examples of both performatives and constatives.

LOCUTIONARY ACTS, according to Austin, are acts **of** speaking, acts involved in the construction of speech, such as uttering certain sounds or making certain marks, using particular words and using them in conformity with the grammatical rules of a particular language and with certain senses and certain references as determined by the rules of the language from which they are drawn.

ILLOCUTIONARY ACTS, Austin's central innovation, are acts done **in** speaking (hence illocutionary), including and especially that sort of act that is the

apparent purpose for using a performative sentence: christening, marrying, and so forth. Austin called attention to the fact that acts of stating or asserting, which are presumably illocutionary acts, are characteristic of the use of canonical constatives, and such sentences are, by assumption, not performatives. Furthermore, acts of ordering or requesting are typically accomplished by using imperative sentences, and acts of asking whether something is the case are properly accomplished by using interrogative sentences, though such forms are at best very dubious examples of performative sentences. In Lecture XXI of Austin (1962), the conclusion was drawn that the locutionary aspect of speaking is what we attend to most in the case of constatives, while in the case of the standard examples of performative sentences, we attend as much as possible to the illocution.

The third of Austin's categories of acts is the PERLOCUTIONARY ACT, which is a consequence or by-product of speaking, whether intended or not. As the name is designed to suggest, perlocutions are acts performed **by** speaking. According to Austin, perlocutionary acts consist in the production of effects upon the thoughts, feelings, or actions of the addressee(s), speaker, or other parties, such as causing people to refer to a certain ship as the Joseph Stalin, producing the belief that Sam and Mary should be considered man and wife, convincing an addressee of the truth of a statement, causing an addressee to feel a requirement to do something, and so on.

Austin (1962: 101) illustrates the distinction between these kinds of acts with the (now politically incorrect) example of saying "Shoot her!," which he trisects as follows:

Act (A) or Locution
He said to me "Shoot her!" meaning by *shoot* "shoot" and referring by *her* to "her."

Act (B) or Illocution
He urged (or advised, ordered, etc.) me to shoot her.

Act (C) or Perlocution
He persuaded me to shoot her.

Though it is crucial under Austin's system that we be able to distinguish fairly sharply between the three categories, it is often difficult in practice to draw the requisite lines. Especially irksome are the problems of separating illocutions and locutions, on the one hand, and illocutions and perlocutions on the other, the latter being the most troublesome problem according to Austin himself.

Austin's main suggestion for discriminating between an illocution and a perlocution was that the former is "*conventional*, in the sense that at least it could be made explicit by the performative formula; but the latter could not" (Austin 1962: 103). This, however, is more a characterization of **possible** illocutionary act than a practicable test for the illocution of a particular sentence or an utterance of it. While the test can give direct evidence as to what is **not** an

illocutionary act, it fails to tell us for sure what the illocution is. If, for example, someone says "The bull is about to charge," and thereby warns the addressee of impending danger, do we say that the speech act of warning is here an illocutionary act of warning because the speaker **could** have said "I warn you that the bull is about to charge"? Another reasonable interpretation would be that in this case, the warning of the addressee, i.e., the production of a feeling of alarm, is a perlocutionary by-product of asserting that the bull is about to charge. Many authors, such as Searle (1969, 1975a) and Allan (1998), seem to accept the idea that potential expression by means of a performative sentence is a sufficient criterion for the recognition of illocutions, while others, e.g. Sadock (1977), do not. Austin himself says that to be an illocutionary act it must also be the case that the **means** of accomplishing it are conventional.

Though a great many subsequent discussions of illocutions are couched within some version of Austin's theory that illocutionary acts are just those speech acts that could have been accomplished by means of an explicit performative, there are examples, such as threatening, that remain problematic. Nearly every authority who has touched on the subject of threats departs from the Austinian identification of illocutionary acts with potential performatives, since threatening seems like an illocutionary act but we cannot threaten by saying, for example, "I threaten you with a failing grade."

As for the distinction between the locutionary act of using particular words and constructions with particular meanings and the illocution performed in using that locution, Austin says that there is a difference between the locutionary MEANING and the illocutionary FORCE of the utterance. Without independent knowledge of the use of these two words in this context, however, the criterion seems circular. The contrast between locution and illocution is often intuitively clear, but problems and controversies arise in the case of performative sentences such as *I christen this ship the Joseph Stalin*. Is the performative prefix *I christen* to be excluded from the locutionary act or included within it? If it is included, is the primary illocutionary act that is done in uttering this sentence to **state** that one christens? Austin presumably would have said that to utter these words is to christen, not to state that one christens, but Allan (1998), for example, insists that the primary illocution is to state something.

There is a considerable literature on the validity and determination of the differences among locutions, illocutions, and perlocutions, some of which will be discussed or mentioned below.

1.2 *The doctrine of infelicities*

An important aspect of Austin's inquiry concerns the kinds of imperfections to which speech acts are prey. The motivation for this interest in the way things can go wrong is that, at first sight, it appears that constatives are just those utterances that are false when they fail, whereas failed performatives are not aptly described as false, but rather as improper, unsuccessful, or, in general, INFELICITOUS. If, for example, a passing inebriate picks up a bottle, smashes it

on the prow of a nearby ship, and says, "I christen this ship the Joseph Stalin," we would not ordinarily say that he or she has said something false, whereas if I **describe** that event by saying, "The passerby christened the ship," I could properly be blamed for uttering a falsehood.

Austin distinguished three broad categories of infelicities:

A. Misinvocations, which disallow a purported act. For example, a random individual saying the words of the marriage ceremony is disallowed from performing it. Similarly, no purported speech act of banishment can succeed in our society because such an act is not allowed within it.

B. Misexecutions, in which the act is vitiated by errors or omissions, including examples in which an appropriate authority pronounces a couple man and wife, but uses the wrong names or fails to complete the ceremony by signing the legal documents. Here, as in the case of misinvocations, the purported act does not take place.

C. Abuses, where the act succeeds, but the participants do not have the ordinary and expected thoughts and feelings associated with the happy performance of such an act. Insincere promises, mendacious findings of fact, unfelt congratulations, apologies, etc. come under this rubric.

As interesting and influential on subsequent investigations as the doctrine of infelicities is, Austin concluded that it failed to yield a crucial difference between performatives and constatives. In the case of both there is a dimension of felicity that requires a certain correspondence with "the facts." With illocutionary acts of assertion, statement, and the like, we happen to call correspondence with the facts **truth** and a lack of it **falsity**, whereas in the case of other kinds of illocutions, we do not use those particular words. Acts of asserting, stating, and the like can also be unhappy in the manner of performatives when, for example, the speaker does not believe what he or she asserts, even if it happens to be true.

1.3 *The performative formula*

Austin investigated the possibility of defining performative utterances in terms of a grammatical formula for performatives. The formula has a first person singular subject and an active verb in the simple present tense that makes explicit the illocutionary act that the speaker intends to accomplish in uttering the sentence. Additionally, the formula can contain the self-referential adverb *hereby:*

(1) "I (hereby) verb-present-active X . . ."

Such forms he calls EXPLICIT PERFORMATIVES, opposing them with PRIMARY PERFORMATIVES (rather than with implicit or inexplicit performatives.) But as Austin shows, the formula is not a sufficient criterion, at least without the

adverb *hereby*, since in general sentences that fit the formula can be descriptive of activities under a variety of circumstances, e.g., *I bet him every morning that it will rain*, or *On page 49 I protest against the verdict.* Nor is the formula a necessary criterion, since there are many forms that differ from this canon and nevertheless seem intuitively to be explicit performatives. There are, for example, passive sentences like *You are fired*, and cases in which the subject is not first person, e.g., *The court finds you guilty.* Austin therefore came to the conclusion that the performative formula was neither a necessary nor a sufficient condition for the recognition of those sentences we might want to call performatives.

There still are numerous clear cases of performative formulae, but the fact that explicit performatives seem to shade off into constatives and other non-performative sentence types greatly weakens their utility as a litmus for illocutionary force, since there are clear cases of illocutionary acts that **cannot** be accomplished in terms of an explicit performative formulae, e.g., **I fire you.* It can also be argued that the illocutionary act performed in uttering a sentence in one or another of the sentential moods (see below) cannot be accomplished by uttering a performative formula, since any such sentence will necessarily be more specific than what is accomplished by the use of the simpler sentence. For example, the illocutionary act that is accomplished by uttering *Come here!* can be reasonably taken to be not an order, request, command, suggestion, or demand, but some more general act of which all of these are more specific versions, a general act for which there is no English verb that can be used in the performative formula. (Compare Alston's notion of ILLOCUTIONARY ACT POTENTIAL discussed below.)

2 The Influence of Grice

Grice's influential articles (1957, 1967), while not dealing directly with the problems that occupied Austin, nevertheless have had a profound influence on speech act theory. In the earlier of these papers, Grice promulgated the idea that ordinary communication takes place not directly by means of convention, but in virtue of a speaker's evincing certain intentions and getting his or her audience to recognize those intentions (and to recognize that it was the speaker's intention to secure this recognition). This holds, Grice suggested, both for speech and for other sorts of intentional communicative acts. In his view, the utterance is not in itself communicative, but only provides clues to the intentions of the speaker.

A later part of Grice's program spelled out how various maxims of cooperative behavior are exploited by speakers to secure recognition of the speaker's intentions in uttering certain words under particular circumstances. Grice distinguished between what is SAID in making an utterance, that which determines the truth value of the contribution, and the total of what is communicated. Things that are communicated beyond what is said (in the technical sense)

Grice called IMPLICATURES, and those implicatures that depend upon the assumption that the speaker is being cooperative he called CONVERSATIONAL IMPLICATURES (see Horn, this volume).

2.1 *Strawson's objection to Austin*

Strawson (1971) criticized the Austinian view as wrongly identifying speech acts such as christening and marrying as typical of the way language works. He pointed out that such illocutionary acts ordinarily take place in highly formal, ritualistic, or ceremonial situations such as ship launchings and weddings. These do indeed involve convention, Strawson conceded, but what one says on such occasions is part of a formalized proceeding rather than an example of ordinary communicative behavior. He argued that for more commonplace speech acts, such as are accomplished by uttering declarative sentences of various sorts, the act succeeds by Gricean means – by arousing in the addressee the awareness that it was the speaker's intention to achieve a certain communicative goal and to get the addressee to reach this conclusion on the basis of his or her having produced a particular utterance.

Warnock (1973) and Urmson (1977) go one step farther than Strawson, arguing in essence that since the act of bidding in bridge, for example, is part of the institution of bridge, it does not even belong to the institution of (ordinary) language (see Bird 1994 for a criticism of this point of view).

2.2 *Searle's defense of Austin*

Searle 1969, a work that is second only to Austin's in its influence on speech act theory, presents a neo-Austinian analysis in which convention once again looms large, contra Grice and Strawson. While not denying the role of Gricean intentions in communication, Searle argued that such an account is incomplete because (1) it fails to distinguish communication that proceeds by using meanings of the kind that only natural languages make available, and (2) it fails to distinguish between acts that succeed solely by means of getting the addressee to recognize the speaker's intention to achieve a certain (perlocutionary) effect and those for which that recognition is "in virtue of (by means of) H[earer]'s knowledge of (certain of) the rules governing (the elements of) [the uttered sentence] T" (Searle 1969: 49–50). Searle labels these ILLOCUTIONARY EFFECTS.

Of the various locutionary acts that Austin mentions, Searle singled out the PROPOSITIONAL ACT as especially important. This, in turn, consists of two components: an ACT OF REFERENCE, in which a speaker picks out or identifies a particular object through the use of a definite noun phrase, and a PREDICATION, which Searle did not see as a separate locutionary act (or any other kind of speech act), but only as a component of the total speech act, which for him is the illocutionary force combined with the propositional content.

Searle (1969) observed that quite often the form of an utterance displays bipartite structure, one part of which determines the propositional act, and the

other part the illocutionary act. The parts of an utterance that together are used by a speaker to signal the propositional act he symbolized as *p*. Formal features of the utterance that determine the literal illocutionary force (which are often fairly complex) he called the ILLOCUTIONARY FORCE INDICATING DEVICE (IFID), which he symbolized as *F*. The form of a complete utterance used to accomplish a complete speech act, including the propositional portion of the locution and the IFID, he therefore wrote as:

(2) $F(p)$.

Among Searle's arguments for the validity of this formula was the claim that negation can be either internal or external to the IFID, at least at the abstract level of grammatical analysis that Chomsky (1965) called deep structure. Thus, if *p* is (underlyingly) *I will come* and *F* is *I promise*, there are two negations, namely *I promise not to come* and *I do not promise to come*, the second of which Searle said must be construed as an illocutionary act of refusing to promise something, not as an illocutionary act of asserting, stating, or describing oneself as not making a certain promise.

A central part of Searle's program is the idea that "speaking a language is performing acts according to rules" (Searle 1969: 36–7), where by "rule" he means a conventional association between a certain kind of act and its socially determined consequences. These are CONSTITUTIVE RULES, he said, in the same sense that the rules of chess are constitutive of the game itself. To perform an illocutionary act, according to Searle, is to follow certain conventional rules that are constitutive of that kind of act. In order to discover the rules, Searle, following Austin, proposed to examine the conditions that must obtain for an illocutionary act to be felicitously performed. For each such condition on the felicitous performance of the act in question, he proposed that there is a rule to the effect that the IFID should only be uttered if that felicity condition is satisfied. The project was carried out in detail for promises, a kind of illocution that Searle described as "fairly formal and well articulated" (Searle 1969: 54), and from which "many of the lessons learned . . . are of general application" (Searle 1969: 54). For the illocutionary act of promising, the rules that he postulated are (Searle 1969: 63):

1 *Pr* (the IFID for promising) is to be uttered only in the context of a sentence (or larger stretch of discourse) T the utterance of which predicates some future act A of S.
2 *Pr* is to be uttered only if the hearer H would prefer S's doing A to his not doing A, and S believes hearer H would prefer S's doing A to his not doing A.
3 *Pr* is to be uttered only if it is not obvious to both S and H that S will do A in the normal course of events.
4 *Pr* is to be uttered only if S intends to do A.
5 The utterance of *Pr* counts as the undertaking of an obligation to do A.

(1982) University of Massachusetts dissertation "The semantics of definite and indefinite noun phrases" (see also Heim 1983a). A major concern of Heim's dissertation was a solution to the problem of what have come to be called DONKEY SENTENCES, after the example used by Peter Geach to introduce the problem to modern readers:

(17) Any man who owns a donkey beats it. [= Geach 1962: 117, ex. 12]

A central aspect of the problem created by such sentences is the interpretation of the phrase *a donkey*. Ordinarily the logical form of sentences with indefinite NPs is given with an existential quantifier, as shown in (3a), repeated here:

(3) A student arrived.
 a. $\exists x$ [Student(x) and Arrived(x)].

If we do that in this case, we would assign (17) the logical form in (17a):

(17)a. $\forall x$ [Man(x) and $\exists y$[Donkey(y) and Own(x, y)] $\rightarrow$ Beat(x, y)].

But the final occurrence of the variable y escapes being bound by the existential quantifier in this formula, which thus expresses the thought "Any man who owns a donkey beats something" – not the intended interpretation.

As noted by Geach, we can assign (17) the logical form in (17b), which seems to give us the right truth conditions:

(17)b. $\forall x \forall y$[[Man(x) and Donkey(y) and Own(x, y)] $\rightarrow$ Beat(x, y)].

However, this is ad hoc. Furthermore the universal quantifier would not be appropriate in the case of (3): used there we would assign (3) the meaning "Every student arrived," which is definitely not correct. But if we use sometimes an existential quantifier and sometimes a universal, we suggest an ambiguity in indefinite NPs which is not felt.

Heim's elegant solution to this problem involved a novel approach to semantic interpretation called FILE CHANGE SEMANTICS. Drawing on prior work by Karttunen (1969, 1976), Heim took mini-discourses like that in (18) as illustrating prototypical uses of indefinite and definite NPs:

(18) A woman sat with a cat on her lap. She stroked the cat and it purred.

On this view a major function of indefinite NPs is to introduce new entities into the discourse, while definite NPs are used to refer to existing discourse entities. Heim analyzed both indefinite and definite NPs as non-quantificational; instead their interpretation involves only a variable, plus whatever descriptive content may reside in the remainder of the NP. Following Karttunen (cf. also Du Bois 1980), Heim likened a discourse to the building up of a file, where the

variables in question are seen as indexes on FILE CARDS representing discourse entities and containing information about them.

The difference between indefinite and definite NPs was expressed with Heim's NOVELTY and FAMILIARITY conditions, respectively. Indefinite NPs were required to introduce a new variable (corresponding to the act of getting out a new blank file card). On the other hand, definite NPs were required to be interpreted with a variable which has already been introduced, and (in the case of a definite description as opposed to a pronoun) whose corresponding file card contains a description congruent with that used in the definite NP. This explicates the idea that definite NPs presuppose existence of a referent, together with the idea that presuppositions are best seen as background information or as the common ground assumed in a discourse (see Stalnaker 1974, 1978; cf. Abbott 2000 for a contrary view).

On this approach an example like (3) (*A student arrived*) would receive an interpretation as in (3c):

(3)c. Student(x) and Arrived(x).

The existential quantification needed for this example is introduced by a general discourse level rule, requiring that file cards match up with actual entities for the discourse to be true. However, if indefinite NPs fall within the scope of a quantified NP, as happens in donkey sentences, the variable they introduce is automatically bound by that dominating NP's quantifier. Thus Heim's File Change Semantics yielded an interpretation for (17) which is equivalent to that in (17b), but without requiring two different interpretations for indefinite NPs.[8]

3.2 *Unfamiliar definites and accommodation*

The familiarity approach to the definiteness–indefiniteness contrast seems to imply that any definite description must denote an entity which has been explicitly introduced into the discourse context or is common knowledge between speaker and addressee, but of course that is not always the case. Consider *her lap* in (18) (assumed to be a definite description). This possessive denotes an entity that has not been specifically introduced.

Heim's solution for this kind of case relied on a principle introduced in David Lewis's classic paper, "Scorekeeping in a language game" (Lewis 1979). In this paper Lewis compared the process of a conversation to a baseball game. One major DISanalogy is the fact that, while the score in a baseball game can only be changed by events on the field, the "conversational scoreboard" frequently undergoes adjustment just because the speaker behaves as though a change has been made. The relevant principle in this case is Lewis's RULE OF ACCOMMODATION FOR PRESUPPOSITIONS:

> If at time t something is said that requires presupposition P to be acceptable, and if P is not presupposed just before t, then – *ceteris paribus* and within certain limits – presupposition P comes into existence at t. (Lewis 1979: 340)

As stated, and without cashing out the *ceteris paribus* clause, Lewis's rule of accommodation is extremely strong – strong enough to make familiarity virtually vacuous as a theory of definiteness (cf. Abbott 2000). Heim sought to rein in its power with a condition that accommodated entities be linked to existing discourse entities, in a move which explicitly recalled the phenomenon of BRIDGING (Clark 1977). The idea is that when entities have been explicitly introduced into a discourse, addressees will automatically make assumptions about entities associated with them, following our knowledge of the properties and relations things in a given category typically have. In the case of *her lap* in example (18), the link is obvious – once a seated person has been introduced, the existence of their lap may be inferred.

Despite the addition of a constrained accommodation rule, there remain difficult cases for the familiarity approach. Descriptions whose semantic content entails a unique referent, like those in (19), require the definite article, and this is difficult for familiarity views to account for.

(19)a. Harold bought the/#a first house he looked at.
b. The instructor assigned the/#some most difficult exercises she could find.
c. In her talk, Baldwin introduced the/#a notion that syntactic structure is derivable from pragmatic principles. [= Birner and Ward 1994, ex. 1a]

There are other examples where the referent of a definite description does not seem to be assumed to be familiar to the addressee, salient in the context, or otherwise already accessible in the discourse. Examples like those in (19) and (20) are sometimes called CATAPHORIC, since the uniquely identifying information follows the definite article.

(20)a. What's wrong with Bill? Oh, the woman he went out with last night was nasty to him. [= Hawkins 1978, ex. 3.16]
b. If you're going into the bedroom, would you mind bringing back the big bag of potato chips that I left on the bed? [= Birner and Ward 1994, ex. 1b]
c. Mary's gone for a spin in the car she just bought. [= Lyons 1999, ex. 18, p. 8]

One could argue that these are simply cases of accommodation, and point out that in each case the intended referent bears some relation to an entity which has already been introduced into the discourse context, but nevertheless they seem contrary to at least the spirit of the familiarity type of approach.

3.3 *Attempts at a synthesis*

In a sense the uniqueness and familiarity theories of definiteness are odd foes. Uniqueness of applicability of the descriptive content, as explicated in Russell's analysis, is a strictly semantic property while the assumption of familiarity to

the lexically stressed syllable of the word" (1994: 126); see also Pierrehumbert (1980).

5 Of course for both topicalization and focus preposing, other constituents may bear pitch accents. Intonationally speaking, the difference between focus preposing and topicalization is that only the former requires that the nuclear accent be on the preposed constituent.

6 As noted in Ward (1988) and Birner and Ward (1998), there is one preposing construction – locative preposing – that does not require a salient OP but does require a semantically locative element in preposed position.

7 Prince is not alone in claiming that at least some types of LD serve to introduce new entities into the discourse: Halliday (1967), Rodman (1974), and Gundel (1974, 1985) propose similar functions.

8 This restriction excludes such passives as that in (i):

(i) A car was stolen right outside our house yesterday.

9 Although the linear word order in this example (NP – *be* – NP) is the same as that of a canonical-word-order sentence, it is nonetheless an inversion, given that the postverbal NP (*our next guest*) represents the logical subject, of which the information represented by the preverbal NP (*a nice woman*) is being predicated. See Birner (1994) for discussion.

8 Topic and Focus

JEANETTE K. GUNDEL AND
THORSTEIN FRETHEIM

In his *Grammar of Spoken Chinese*, Chao (1968) notes a distinction between the grammatical predicate of a sentence and what he calls the "logical predicate." Chao points out that the two do not always coincide, illustrating this point with the following exchange between a guide (A) and a tourist (B):

(1) *A*: We are now passing the oldest winery in the region.
B: Why?

The source of the humor here is that the English sentence uttered by the guide has two possible interpretations. On one interpretation, the main predicate asserted by the sentence (Chao's logical predicate) coincides with the grammatical predicate, i.e., *are now passing the oldest winery in the region*. On the other interpretation, the logical predicate includes only the direct object. The tourist (B) seems to be questioning the first interpretation (we are passing the oldest winery in the region), but it is the second interpretation that the guide actually intended to convey (what we are passing is the oldest winery in the region).

Chao notes (1968: 78) that the humor would be absent in Chinese because "in general, if in a sentence of the form S-V-O the object O is the logical predicate, it is often recast in the form S-V *de shO* 'what S V's is O', thus putting O in the center of the predicate." In this case, the guide's intended message would be expressed in Chinese by a sentence which more literally translates as *The one we are passing now is the oldest winery in the region*.

Within the Western grammatical tradition, the idea that there is a distinction between the grammatical subject and predicate of a sentence and the subject–predicate structure of the meaning that may be conveyed by this sentence (its INFORMATION STRUCTURE) can be traced back at least to the second half of the nineteenth century, when the German linguists von der Gabelentz (1868) and Paul (1880) used the terms PSYCHOLOGICAL SUBJECT and PREDICATE for what Chao calls "logical subject" and "predicate" (or "topic" and "comment"), respectively. Work of the Czech linguist Mathesius in the 1920s (e.g. Mathesius

1928) initiated a rich and highly influential tradition of research in this area within the Prague School that continues to the present day (see Firbas 1966, Daneš 1974, Sgall et al. 1973, Sgall et al. 1986, inter alia). Also influential has been the seminal work of Halliday (1967) and, within the generative tradition, Kuroda (1965, 1972), Chomsky (1971), Jackendoff (1972), Kuno (1972, 1976b), Gundel (1974), and Reinhart (1981), inter alia. More recent work will be cited below.

Unless otherwise noted, we use the term FOCUS in this paper to refer roughly to the function described by Chao's notion of logical predicate, and we use the term TOPIC to refer to the complement of focus. Topic is what the sentence is about; focus is what is predicated about the topic. Our primary goals will be to clarify some of the major conceptual and terminological issues, to provide an overview of the phenomena that correlate with topic and focus across languages, and to review recent empirical and theoretical developments.

1 Conceptual and Terminological Issues

The literature on topic and focus is characterized by an absence of uniformity in terminology. Besides the earlier terms of psychological/logical subject and predicate, current terms for topic also include THEME and GROUND. In addition to focus, other terms for the complement of topic include COMMENT and RHEME. Most authors agree that these concepts, unlike purely syntactic functions such as subject and object, have a consistent semantic/pragmatic value. However, topic and focus are also sometimes defined directly on syntactic structures (e.g., Chomsky 1965, Halliday 1967, Kiss 1998). Consequently, topic, focus, and related terms have been used in a dual sense (sometimes by the same author) to refer to syntactic (and phonological) categories as well as their semantic/pragmatic interpretation. Below we address a few of the major conceptual issues.

1.1 *Two given–new distinctions*

The topic–focus distinction has been widely associated with the division between given and new information in a sentence. There has been disagreement and confusion, however, regarding the exact nature of this association. Some of the confusion has resulted from conflating two types of givenness–newness.[1] Following Gundel (1988, 1999a), we refer to these as REFERENTIAL GIVENNESS–NEWNESS and RELATIONAL GIVENNESS–NEWNESS.

Referential givenness–newness involves a relation between a linguistic expression and a corresponding non-linguistic entity in the speaker/hearer's mind, the discourse (model), or some real or possible world, depending on where the referents or corresponding meanings of these linguistic expressions are assumed to reside. Some representative examples of referential givenness concepts include existential presupposition (e.g. Strawson 1964b), various senses

of referentiality and specificity (e.g. Fodor and Sag 1982, Enç 1991), the familiarity condition on definite descriptions (e.g. Heim 1982), the activation and identifiability statuses of Chafe (1994) and Lambrecht (1994), the hearer-old/new and discourse-old/new statuses of Prince (1992), and the cognitive statuses of Gundel et al. (1993). For example, the cognitive statuses on the Givenness Hierarchy in (2) represent referential givenness statuses that an entity mentioned in a sentence may have in the mind of the addressee.

(2) **The Givenness Hierarchy** (Gundel et al. 1993)

in focus > activated > familiar > uniquely identifiable > referential > type identifiable

Relational givenness–newness, in contrast, involves a partition of the semantic/conceptual representation of a sentence into two complementary parts, X and Y, where X is what the sentence is about (the logical/psychological subject) and Y is what is predicated about X (the logical/psychological predicate). X is given in relation to Y in the sense that it is independent of, and outside the scope of, what is predicated in Y. Y is new in relation to X in the sense that it is new information that is asserted, questioned, etc. about X. Relational givenness–newness thus reflects how the informational content of a particular event or state of affairs expressed by a sentence is represented and how its truth value is to be assessed. Examples of relational givenness–newness pairs include the notions of logical/psychological subject and predicate mentioned above, presupposition–focus (e.g. Chomsky 1971, Jackendoff 1972), topic–comment (e.g. Gundel 1974), theme–rheme (e.g., Vallduví 1992), and topic–predicate (Erteschik-Shir 1997). Topic and focus, as we use these terms here, are thus relationally given and new, respectively.

Referential givenness–newness and relational givenness–newness are logically independent, as seen in the following examples (from Gundel 1980 and 1985, respectively):

(3) *A*: Who called?
B: Pat said SHE[2] called.

(4) *A*: Did you order the chicken or the pork?
B: It was the PORK that I ordered.

If *SHE* in (3) is used to refer to Pat, it is referentially given in virtually every possible sense. The intended referent is presupposed, specific, referential, familiar, activated, in focus, identifiable, hearer-old, and discourse-old. But, at the same time, the subject of the embedded sentence in this example is relationally new and, therefore, receives a focal accent. It instantiates the variable in the relationally given, topical part of the sentence, *x called*, thus yielding the new information expressed in (3). Similarly, in (4), the pork is referentially given. Its cognitive status would be at least activated, possibly even in focus,

since it was mentioned in the immediately preceding sentence.[3] But it is new in relation to the topic of (4), what B ordered.

The two kinds of givenness–newness also differ in other respects. Both are properties of meaning representations. However, while relational givenness–newness is necessarily a property of linguistic representations, i.e., the meanings associated with sentences, referential givenness–newness is not specifically linguistic at all. Thus, one can just as easily characterize a visual or non-linguistic auditory stimulus, for example a house or a tune, as familiar or not, in focus or not, and even specific or not. In contrast, the topic-focus partition can only apply to linguistic expressions, specifically sentences or utterances and their interpretations.

Corresponding to this essential difference is the fact that referential givenness statuses, e.g., familiar or in focus, are uniquely determined by the knowledge and attention state of the addressee at a given point in the discourse. The speaker has no choice in the matter.[4] Relational givenness notions like topic, on the other hand, may be constrained or influenced by the discourse context (as all aspects of meaning are in some sense), but they are not uniquely determined by it. As Sgall et al. (1973: 12) notes, a sentence like *Yesterday was the last day of the Davis Cup match between Australia and Romania* could be followed either by *Australia won the match* or by *The match was won by Australia.* While the latter two sentences could each have an interpretation in which the topic is the Davis Cup match, or one in which the whole sentence is a comment on some topic not overtly represented in the sentence, it is also possible in exactly the same discourse context to interpret the first of these sentences as a comment about Australia and the second as a comment about the match. Which of these possible interpretations is the intended one depends on the interests and perspective of the speaker.

One place in which the linguistic context often seems to determine a single topic–focus structure is in question–answer pairs, which is why these provide one of the more reliable contextual tests for relational givenness–newness concepts. Thus, (5b) is judged to be an appropriate answer to the question in (5a) because the location of the prominent pitch accent is consistent with an interpretation in which the topic is who the Red Sox played and the focus is the Yankees. But (5c), for which the location of prominent pitch accent requires an interpretation in which the topic is who played the Yankees, is not an appropriate response to (5a).

(5)a. Who did the Red Sox play?
b. The Red Sox played the YANKEES.
c. #The RED SOX played the Yankees.
d. #I love baseball.

The fact that the judgments here are sensitive to linguistic context has no doubt contributed to the widely held view that topic and focus are pragmatic concepts. However, as Gundel (1999b) points out, questions constrain other

aspects of the semantic–conceptual content of an appropriate answer as well. All aspects of the meaning of a sentence have pragmatic effects in the sense that they contribute to a relevant context for interpretation. This much is determined by general principles that govern language production and understanding (Sperber and Wilson 1986a). Thus, (5d) is no more appropriate as an answer to (5a) than (5c) would be, though the exact reason for the inappropriateness is different. The fact that location of the prominent pitch accent has pragmatic effects thus does not itself warrant the conclusion that pitch accent codes a pragmatic concept, any more so than it would follow that the difference in meaning between (5b) and (5d) is pragmatic because the two sentences would be appropriate in different linguistic contexts.

1.2 *Referential properties of topic*

We noted in the previous section that topic–focus structure is associated with relational givenness–newness in the sense that topic is given in relation to focus and focus represents the new information predicated about the topic. This association is logically independent of referential givenness–newness, which is not necessarily connected to topic or focus at all. As we saw in examples (3) and (4), the focus (relationally new) part of the sentence can contain material that has a high degree of referential givenness. There is, however, a good deal of empirical evidence for an independent connection between topic and some degree of referential givenness. Virtually the whole range of possible referential givenness conditions on topics has been suggested, including presupposition, familiarity, specificity, referentiality, and focus of attention.

Some of the more well-known facts that indicate a connection between topicality and some kind of referential givenness have to do with the "definiteness" or "presupposition" effect of topics. For example, it has often been noted (e.g., in Kuroda 1965, Kuno 1972, inter alia) that the phrase marked by a topic marker in Japanese and Korean necessarily has a "definite" (including generic) interpretation. Thus, in (6), where the subject phrase is followed by the nominative marker *ga*, both the subject and the object can have either a definite or indefinite interpretation. But in (7), where the subject is followed by the topic marker *wa*, it can only be interpreted as definite.

(6) Neko ga kingyo o ijit-te ......
cat NOM goldfish OBJ play with-and
"The/A cat is playing with the/a goldfish, and . . ."

(7) Neko wa kingyo o ijit-te
cat TOP goldfish OBJ play with-and
"The/*A cat is playing with the/a goldfish, and . . ."

Similarly, in prototypical topic–comment constructions like those in (8)–(11), the topic phrase adjoined to the left of the clause is definite:

(8) My sister, she's a high school teacher.

(9) That book you borrowed, are you finished reading it yet?

(10) My work, I'm going crazy. (Bland 1980)

(11) The Red Sox, did they play the Yankees?

Indefinites are generally excluded from topic position unless they can be interpreted generically, as illustrated in (12) (from Gundel 1988):

(12)a. The window, it's still open.
b. *A window, it's still open.[5]

Gundel (1985, 1988) proposes a condition on felicitous topics which states that their referents must already be familiar, in the sense that the addressee must have an existing representation in memory.[6] Since indefinites aren't generally used to refer to familiar entities (unless they are intended to be interpreted generically), the familiarity condition on topics provides a principled explanation for facts like those in (6)–(12).[7] It also captures, in more overtly cognitive terms, Strawson's (1964b) insight that only topical definites necessarily carry an existential presupposition.

The examples in (6)–(12) provide support for a familiarity condition on topics only to the extent that the constructions in question can be assumed to mark topics. These assumptions, though widely held, are not totally uncontroversial. For example, Tomlin (1995) proposes that Japanese *wa* is not a topic marker, but a new information marker. He argues that topics are associated with given information, but *wa* is typically used to mark noun phrases referring to entities that are newly introduced or reintroduced into the discourse. Tomlin's argument rests on the assumption that topics are referentially given in the sense of being the current focus of attention. Similar restrictions on topics are assumed by Erteschik-Shir (1997), who analyzes the left-dislocated phrase in constructions like (8)–(12) as a focus rather than a topic, since it is more likely to be something the speaker wants to call to the addressee's attention than something that is already in the focus of attention. Both Tomlin and Erteschik-Shir base their arguments on conceptions of topic that blur the distinction between relational and referential givenness by essentially equating topic with focus of attention.[8] Their notion of topic is thus closer to "continued topic" or to the backward-looking center of Centering Theory (see Walker et al. 1998). While some authors propose that topics are necessarily activated or even in focus because they have been mentioned recently in the discourse, others deny that topics must have any degree of referential givenness at all, including familiarity. For example, Reinhart (1981) proposes that topics only have to be referential. She notes that specific indefinites, whose referents are generally not familiar, can appear in dislocated topic position, as in the following example from Prince (1985):[9]

(13) An old preacher down there, they augured under the grave where his wife was buried.

To sum up, topics are relationally given, by definition, in the sense that they are what the sentence/utterance is about. They provide the context for the main predication, which is assessed relative to the topic. The association of topics with definiteness across languages suggests that topics must also be referentially given (familiar or at least uniquely identifiable), and some researchers define topics even more narrowly to include only entities with the highest degree of referential givenness, the current center of attention. Others propose to abandon any referential givenness condition on topics, citing the possibility of indefinite topics as in (13).

1.3 *Information focus vs. contrastive focus*

As we saw in the previous section, topic is sometimes defined in terms of the referential givenness status of entities, thus resulting in some conceptual confusion between two distinct, though orthogonal, interpretive categories: topic as a relational category (the complement of focus/comment) and topic as the current center of attention. There has been a similar confusion between two conceptually distinct interpretative notions of focus: one of these is relational – the information predicated about the topic; the other is referential – material that the speaker calls to the addressee's attention, thereby often evoking a contrast with other entities that might fill the same position. We refer to these two senses as INFORMATION FOCUS and CONTRASTIVE FOCUS, respectively.[10] According to Rooth (1985), evoking alternatives is the primary function of focus (cf. Chafe 1976 for a similar position), and the contrast set evoked by the focus provides the locus for focus-sensitive operators such as *only*, *even*, and *also*. Other researchers (e.g. Horn 1981, Vallduví 1992) take information status to be primary and treat contrast as secondary and derivative.

Both information focus and contrastive focus are coded by some type of linguistic prominence across languages, a fact that no doubt has contributed to a blurring of the distinction between these two categories. Information focus is given linguistic prominence, typically (and possibly universally) by means of some sort of prosodic highlighting, because it is the main predication expressed in the sentence – the new information in relation to the topic. It correlates with the questioned position in the relevant (implicit or explicit) *wh*-question or alternative *yes-no* question that the sentence would be responsive to. Thus, in both (14) and (15) below *Bill* expresses the information focus that identifies the one who called the meeting (the topic) as Bill.

(14) *A*: Do you know who called the meeting?
B1: BILL called the meeting.
B2: It was BILL who called the meeting.

(15) Every time we get together I'm the one who has to organize things, but this time BILL called the meeting.

But marking the information focus is not the only reason to call attention to a constituent. A constituent may also be made prominent because the speaker/writer does not think the addressee's attention is focused on some entity and for one reason or another would like it to be – for example, because a new topic is being introduced or reintroduced (topic shift) or because the meaning associated with some constituent is being contrasted, implicitly or explicitly, with something else.[11] The example in (16) illustrates a contrastive focus on the constituent referring to the topic (*that coat*). Example (17) has a contrastive focus on the constitutent referring to the topic (*the curry*) as well as on the information focus (*Bill*), thus showing that contrastive focus and information focus can coincide (see Gundel 1999a).

(16) We have to get rid of some of these clothes. That COAT you're wearing I think we can give to the Salvation ARMY.

(17) *A*: Who made all this great food?
B: BILL made the CURRY.

As seen in (14)–(17), both information focus and contrastive focus may be marked with a prominent pitch accent: Thus, (16) and (17) each have two positions of prominent pitch accent – one of these falls on the information focus, and the other falls on a contrastive topic.

It is widely assumed (though not uncontroversially) that in languages that use pitch accent to mark information focus, when a sentence contains only a single prominent pitch accent (as in (14) and (15) above) this will necessarily fall on the information focus (see Schmerling 1976, Gundel 1978, Selkirk 1984, Zacharski 1993, Vallduví and Vilkuna 1998, inter alia). Gundel (1999a) maintains that this is because all sentences have an information focus, as an essential part of the function of sentences in information processing, but not all sentences/utterances have a contrastive focus, the latter being determined primarily by a speaker/writer's intention to affect the addressee's attention state at a given point in the discourse. However, as Büring (1999) points out, a prominent pitch accent inside the constituent corresponding to the topic is obligatory in some discourse contexts. Büring, in fact, restricts the term "topic" to constituents that receive a prominent pitch accent (his S-topics). Topics for him are "simply an (improper) part of the non-focus" (Büring 1999: 145), and non-contrasted material that is not part of the information focus is called background. Thus, in (17), for example, *Bill* corresponds to the topic, *the curry* corresponds to the focus, and *made* represents the background.[12]

Similarly, both contrastive focus and information focus may be syntactically coded by placing the relevant constituent in a syntactically prominent position. This has resulted in some confusion in the literature, with the term

"topicalization" being used to mark preposing of (contrastively focused) topics, as in (16) above, as well as preposing of information focus, as in (18).[13]

(18) *A*: Which of these clothes do you think we should give to the Salvation Army?
B: That COAT you're wearing (I think we can give away).

The sentences in (16) and (18) are similar in that both have a prosodically prominent sentence-initial object (*that coat you're wearing*) that may be in contrast with other objects in some contextually relevant set. The information status of the preposed objects is different, however. In (16), the coat is a topic, possibly (though not necessarily) contrasting with other members of the set of clothes that are candidates for being disposed of and to which the predicate *we can give to the Salvation Army* would or would not apply. In (18), the coat is part of the information focus, the new information identifying objects that would be included in the set described by the topic (clothes that would be suitable to give away) and possibly contrasting with other clothes that could also be included in that set.[14] The type of pitch accent on the two preposed phrases is different as well, as will be discussed in section 2.

2 Phenomena

2.1 *Focus and intonation*

The association between prosodic prominence and focus has been shown to hold in a variety of typologically and genetically diverse languages, and is widely believed to be universal.[15] In some languages, there is no type of prosodic prominence that distinguishes information focus from contrastive focus (including contrastive topic). Thus, according to Vallduví and Vilkuna (1998: 89), information focus (their "rheme") and contrast (their "kontrast") are "associated with a single high tone accent" in Finnish, and the distinction between the two is coded syntactically rather than prosodically. Similarly, Fretheim (1987, 1992a, 1992b, 2001) argues that there is no particular pitch contour that encodes topic or focus in Norwegian. When a Norwegian unit contains two fundamental frequency maxima for maximum prosodic prominence, either one of them could be the information focus. Thus (19), with a prosodically prominent subject as well as a prosodically prominent direct object, could be a statement about Fred or a statement about the beans. There is no intonational phenomenon in Norwegian that enables the hearer to uniquely identify topic and focus in an utterance of (19). This must be determined by pragmatic inference alone.

(19) FRED spiste BØNNENE
Fred ate the beans
"Fred ate the beans."

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